AUGUST 18, 1945

Railway Age

Founded in 1856

Sen 31

2,206,213 miles—average availability 98.3%

CONGRESS
SERIAL RECORD
AUG 23 1945

EVERY day at 3:15 P.M. a train of [redacted] Pullman sleepers leaves the Illinois Central Station in Chicago, and pulls into New Orleans eighteen hours later.

That same day, the train leaves New Orleans at 3:15 P. M. and arrives at Chicago at 9:15 the next morning. Average speed, 51.2 miles per hour.

The train is powered both ways by two General Motors Diesel locomotives—daily mileage, 1,842.

Up to the end of April this year, these locomotives had rolled up a total of 2,206,213 miles, with an average availability record of 98.3%, having covered all but 37,971 miles of their assigned mileage.

Remarkable? Well, considering that General Motors Diesel locomotives are continually setting up records like this or better on 83 major railroads and heavy industries, it isn't as remarkable as it might have been a decade ago. In fact, then it would have been miraculous!

• • •

When a General Motors Diesel locomotive is properly maintained, it should deliver close to 100% availability, barring unforeseeable accidents. Running repairs and readily accessible standard parts meet most contingencies.

ON TO FINAL VICTORY **BUY MORE WAR BONDS**

YOUTHFUL IN STAYING POWER

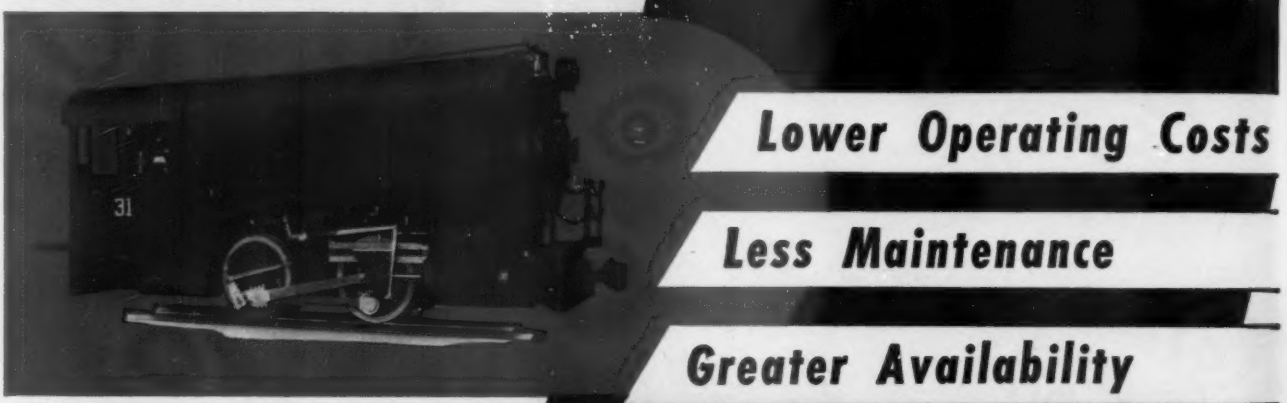
GENERAL MOTORS LOCOMOTIVES

VETERANS FOR PERFORMANCE

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION • LA GRANGE, ILL.

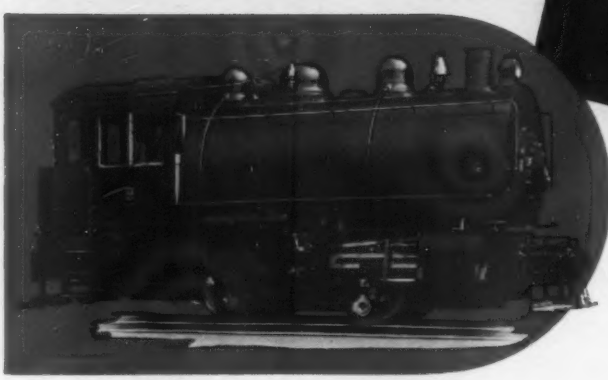
PORTER Steam Locomotives



Lower Operating Costs

Less Maintenance

Greater Availability



Here are some of the features that give PORTER Locomotives their EXTRA STAMINA

1. Extra-heavy frames, flame-cut from solid, heavy-section, Universal mill plate. Annealed and heat-treated after cutting.
2. Axles, crank pins, guides, rods, and other strain-bearing parts solid-forged from best quality open hearth steel.
3. Extra large bearing surfaces on all moving parts.
4. Accurate machining of all wearing and fitted surfaces.
5. Case-hardened pins and bushings at all vital parts.

PORTER "Better Built" Equipment
Established 1866

ARMY E NAVY

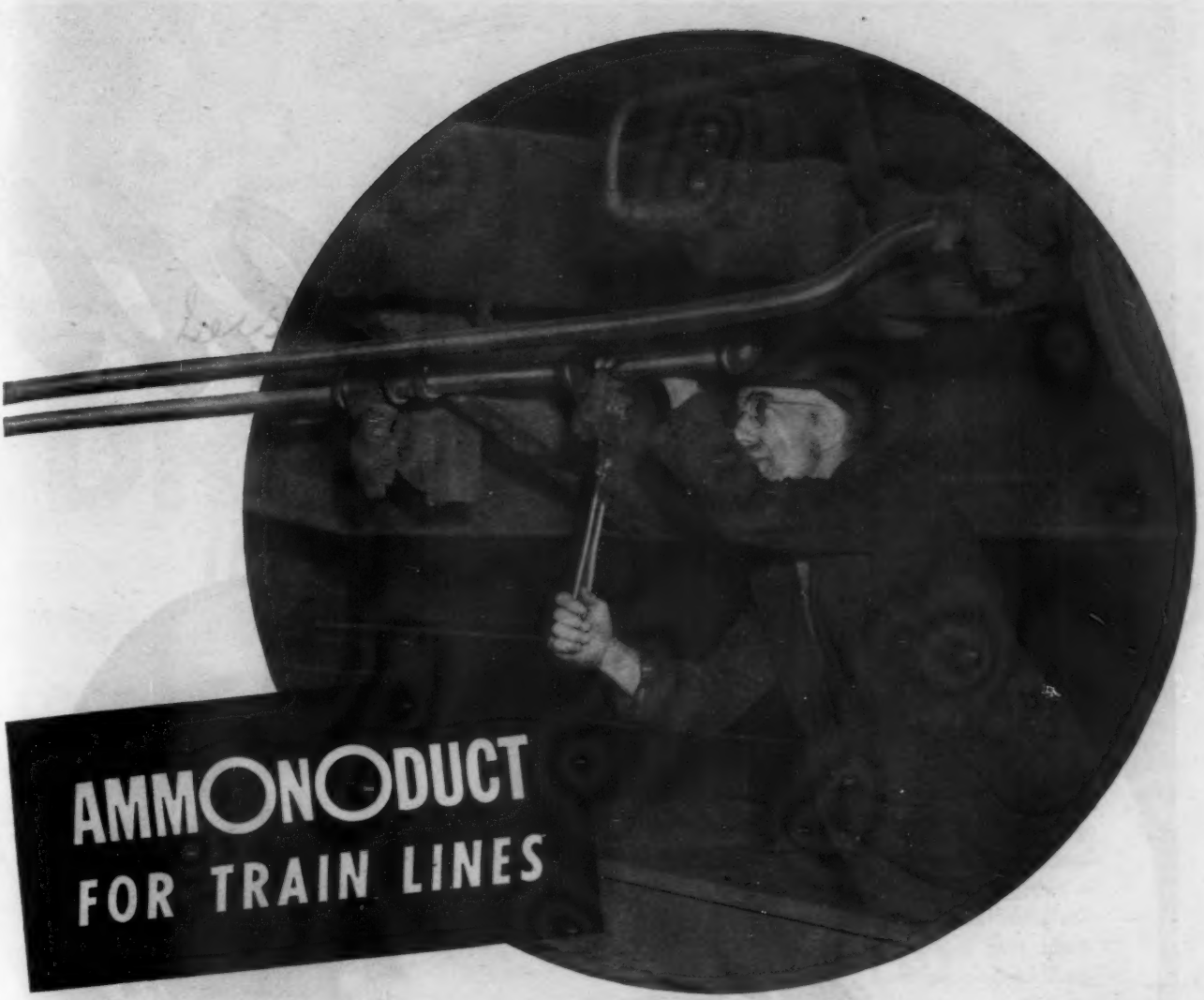
PORTER Agitators, Mixers, Blenders, Ball and Pebble Mills, Wood Tanks.
DEVINE Heat Exchangers, Dryers, Pressure Vessels, Fractionating Towers, Impregnators.
QUIMBY CHEMICAL PUMPS: Centrifugal, Screw, Rotex.
FORT PITT Stainless and Special Alloy Steel Castings.
PORTER Locomotives. Steam, Fireless Steam, Diesel, Diesel-Electric.
MT. VERNON Railroad, Mine, and Industrial Cars.
PORTER-BLAIRSVILLE Forgings.

H. K. PORTER COMPANY, Inc.

PITTSBURGH, PA. • BLAIRSVILLE, PA.

NEWARK, N.J. • NEW BRUNSWICK, N.J. • MT. VERNON, ILL.

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 119, No. 7.



. . . because it resists fatigue failure

If you're planning to install train-line or air-brake piping on freight and passenger cars scheduled for repair, use Ammonoduct steel pipe.

Ammonoduct is highly resistant to fatigue failure or embrittlement caused by shock and vibration stresses. Why? Because it is made from a special grade of low-carbon open-hearth steel—an unusually ductile steel that is clean and uniform, and free from hard spots.

Ammonoduct is readily threaded and welded, and its ductility makes it easy to cold-bend and cold-form. It is in fact so ductile that even a U-bend that has been made cold can be restraightened without fracture. Because there's no need for preheating and annealing, Ammonoduct is fabricated with a considerable saving in time and money.

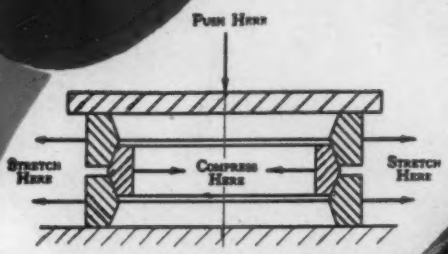
Ammonoduct is made by the continuous-weld process, and is furnished in sizes from ½ in. to 3 in., standard and extra-strong weights, to specifications AAR M-111 and ASTM A-53. Even with its easy working, resistance to fatigue failure, and other advantages, Ammonoduct sells for the same price as regular steel pipe. Specify Ammonoduct on your next pipe order.

AMMONODUCT

for Train Lines and Air-Brake Piping

BETHLEHEM STEEL

Edgew



PRINCIPLE OF THE RING SPRING

EDGEWATER STEEL COMPANY · PITTSBURGH, PA.

...ater DRAFT GEARS

INHERENT STRENGTH

through EDGEWATER'S exclusive RING SPRING PRINCIPLE

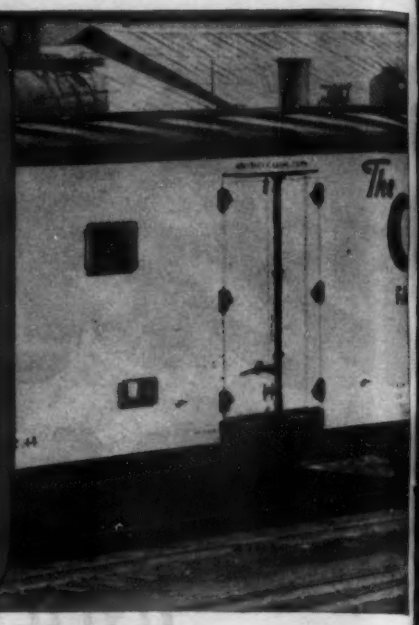
IN ITS primary state, as cast, steel contains inherent defects which can be removed by proper working. By refining the grain and imparting desirable directional properties, hot working improves the quality of the product being manufactured. The car protecting ring spring embodied in the Edgewater B-32-KA Draft Gear is made from chrome alloy spring steel. The metal is cast in ingots, rolled into billets and still further reduced to round bars. The bars are hot sheared, upset, punched, and hot rolled on a small tire mill to produce individual weldless rings with circumferential grain flow. Due to the great amount of hot working, the rings are in the best condition to respond to the carefully controlled heat treatment for high strength and hard wearing surfaces.

New propane tank car built by General American Transportation Corporation for the Army Service Forces.

Atlanta, Ga. Baltimore, Md. Boston, Mass. Chicago, Ill. Cleveland, O. Kansas City, Mo. Louisville, Ky. New York, N.Y. Philadelphia, Penna. St. Louis, Mo. St. Paul, Minn. San Francisco, Calif. Seattle, Wash. Washington, D. C.

90% "USE-ABILITY"

That's why Alco-G.E. diesel-electrics enable west coast yards to keep pace with the war in the Pacific



WHEN the center of war interest shifted from east to west—Pacific seaboard yards and terminals were given their most important assignment: meeting the speeded-up schedules for shipments to the Pacific war theatre.

WORKING 3 TRICKS A DAY

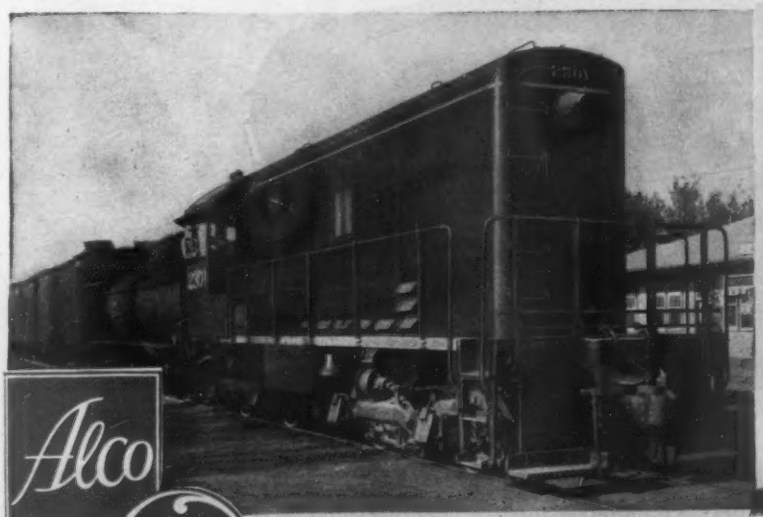
At this vital job, Alco-G.E. diesel-electrics are proving indispensable. Stopping only for fuel every third or fourth day, they are working three eight-hour tricks a day, switching and classifying trains of as many as 100 loaded cars. On one typical operation, four 1000-hp units are averaging 96.5 per cent in availability. They are at work 22.5 hours a day—a utilization factor of more than 93 per cent. Less than one per cent of the time was required for servicing and inspection.

SERVICED DURING LUNCH HOUR

A 380-hp (44-ton) unit at another location often works every hour of the day, handling trains of 20 to 22 loaded cars. Its daily servicing and inspection are completed during the lunch period, and its total operating cost, less wages, averages less than half that of steam locomotives of comparable weight.

PREPARE FOR PEACETIME COMPETITION

The Pacific seaboard is but one example of how the low maintenance requirement of Alco-G.E. diesel-electrics produces additional work-packed locomotive-hours which the railroads need so urgently to keep pace with the growing demands of war. Their ability to perform this service at low cost per ton-mile is the reason why you should incorporate Alco-G.E. diesel-electrics into your plans for meeting stiff competition. The services of Alco-G.E. engineers are available for a motive-power survey. Because they have all three types of motive power at their disposal—diesel-electric, electric, and steam—they can recommend the one which is economically best suited to your operations.



10-YEAR-OLD ALCO-G.E. UNIT—it often works 24 hours a day breaking up 75-car trains at the Santa Fe's Fresno yard. Since 1935, it has been available for work 80,000 hours, and its average maintenance cost during the entire period has been very low.

Alco GE

AMERICAN LOCOMOTIVE

1000-HP ALCO-G.E. diesel-electric switching refrigerator cars at San Bernardino, Cal.

4 ALCO-G.E. DIESEL-ELECTRICS RELEASE 6 STEAM ENGINES for Southern Pacific main-line service. Switching freight and passenger cars in the Sparks, Nevada, yards, these diesel-electrics are in service 24 hours a day, and need refueling—which takes but 30 minutes—only once every three days. Their only time out of service is a roundhouse check-up once a month.

PACIFIC ELECTRIC'S FIVE 44-TONNERS are doing a gallant job of keeping war supplies moving in the Los Angeles area. One unit, at San Bernardino, starts its day with a round trip into the mountains, works the rest of the day at switching, and at night makes another 60-mile round trip with a string of cars. Pacific Electric depends on these diesel-electrics day in and day out.

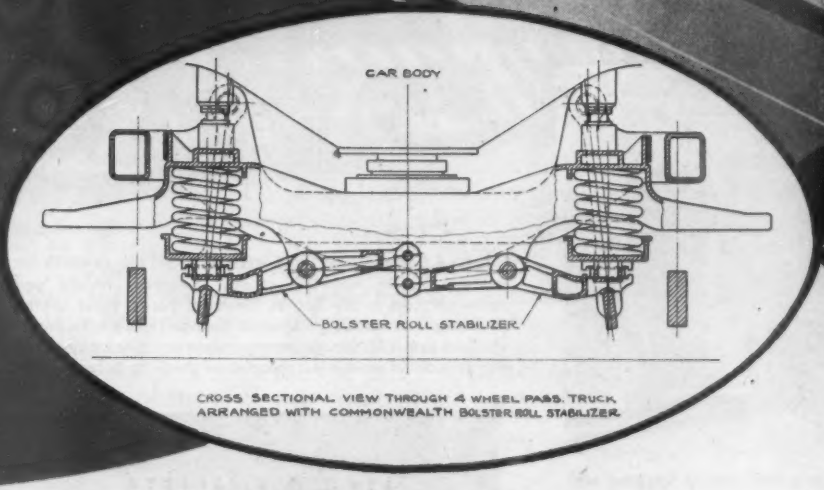
"SAN DIEGAN," crack streamliner of the Santa Fe, being "Y-ed" at San Diego for its return trip to Los Angeles. In addition to handling close-schedule passenger-train switching, this 44-ton diesel-electric does the industrial switching at San Diego. Its availability for work during three recent months averaged 97.7 per cent.

ALCO-G.E. FLEETS OPERATED BY RAILROADS SERVING THE WEST COAST

Alameda Belt Line	3
Los Angeles Junction Railway Co.	2
Southern Pacific Co.	78
Pacific Electric	5
State Belt Railroad of Cal.	4
Western Pacific	16
Northern Pacific Terminal	8
Spokane, Portland & Seattle	19
Union Pacific	19
Great Northern	15
Santa Fe	54
San Francisco & Napa Valley	3
Chicago, Milwaukee, St. Paul & Pacific	23
Canadian Pacific	10

and GENERAL ELECTRIC

FOR SMOOTHER, QUIETER, S



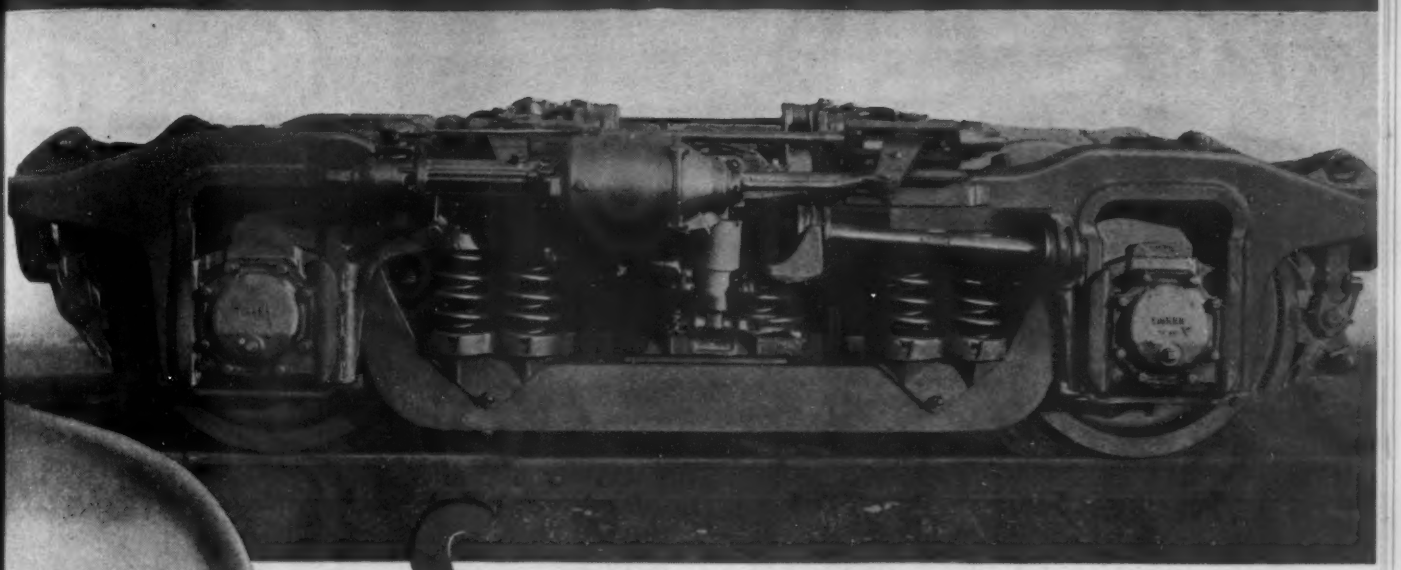
CROSS SECTIONAL VIEW THROUGH 4 WHEEL PASS. TRUCK ARRANGED WITH COMMONWEALTH BOLSTER ROLL STABILIZER.

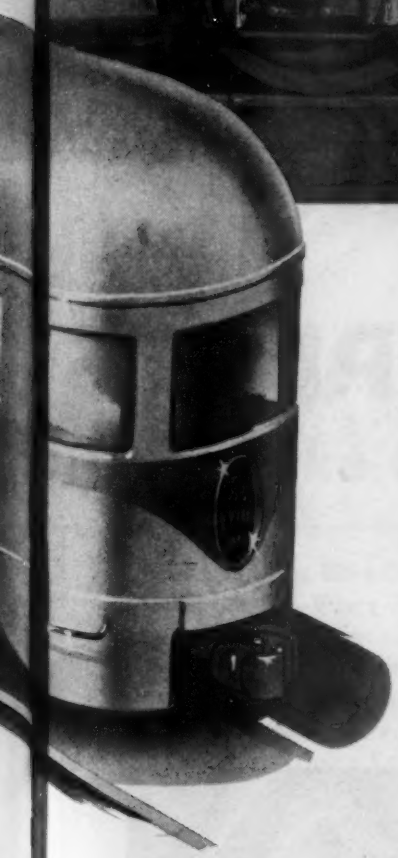
COMMONWEALTH BOLSTER ROLL STABILIZER

THIS stabilizer was developed especially for sleeping cars, diners, lounge, and observation cars, to prevent car body roll. It is composed of a split spring plank, the two separate parts of which are connected to each other and to the bolster so as to prevent the bolster from moving out of plane with the track and over-loading the springs. This feature results in positive mechanical control of car roll and allows the use of more flexible coil springs, further improving riding qualities.

GENERAL STEEL

R, SAFER RIDING AT HIGH SPEEDS





Specify This COMMONWEALTH Passenger Car Truck

DESIGNED for light-weight, high-speed transportation, this COMMONWEALTH 4-Wheel Passenger Car Truck is equipped with bolster and equalizer coil springs, shock absorbers, bolster anchors, and, if desired, bolster roll stabilizers. These advanced design features assure the best possible riding qualities at high speeds, freedom from vibration and lateral sway, insuring greater passenger comfort and safety.

This modern truck utilizes Commonwealth one-piece alloy cast steel truck frame, bolster, and spring plank or bolster roll stabilizer castings—providing greater strength with minimum weight, utmost serviceability at lowest maintenance expense.

The fact that America's finest trains are equipped with Commonwealth trucks is proof of their superior performance under every type of service condition.

COMMONWEALTH CASTINGS EDDYSTONE, PA. GRANITE CITY, ILL.

Koppers Helps Make Railroad Roofs Last Longer—Koppers roofs are built of Coal Tar Pitch and Tar-Saturated Felt. This is the material which has been setting long-life records on buildings for a half century. One of the secrets of the long life of coal tar pitch roofs is their "cold flow," a property which enables the roofs to self-heal and self-seal any small surface breaks which may happen. This is especially valuable in railroad roofs where vibration or settlement of a building may cause surface breaks.

KOPPERS

Koppers Helps Make Car Decks Last Longer—Photos below illustrate typical case histories. Based on costs as reported by a user, annual charges on treated decks are less than half those of untreated decks. Send for our booklet "Economical and Permanent Construction with Pressure-Treated Wood."

This car, with untreated decking, in for repairs after only 5 years.

This car, with treated siding and decking, in for repairs after 14 years. There has been remarkably little breakage and no decay.

Koppers Helps Make Cylinder Packing Last Longer—American Hammered Bronze Iron Cylinder Packing, developed by the engineers at the American Hammered Piston Ring Division of Koppers, is giving service up to 200,000 miles. The long life of this packing has contributed greatly to providing greater engine availability in this period of heavy traffic.

— helps the *Railroads* to make things last longer

Koppers Helps Make Concrete and Masonry Last Longer—Where concrete or masonry are exposed to a head of water or to the erosive action of running water, serious damage and deterioration may occur. In this picture, Koppers Waterproofing Pitch and Waterproofing Fabric were being used to waterproof the floor of a bridge before the installation of tracks. Let us send you the folders on Waterproofing and Dampproofing.

KOPPERS

THE INDUSTRY THAT SERVES ALL INDUSTRY

KOPPERS COMPANY, INC., PITTSBURGH 19, PA. **Buy War Bonds . . . and Keep Them!**

Send for these Koppers booklets:

- ☐ Roofing Specifications
- ☐ Koppers Waterproofing
- ☐ Koppers Dampproofing
- ☐ Economical and Permanent Construction with Pressure-Treated Wood
- ☐ Painting of Creosoted Wood
- ☐ Bituminous Paints
- ☐ Koppers Pressure-Treated Grade Crossing Panels
- ☐ Koppers Bronze-Iron Cylinder Packing

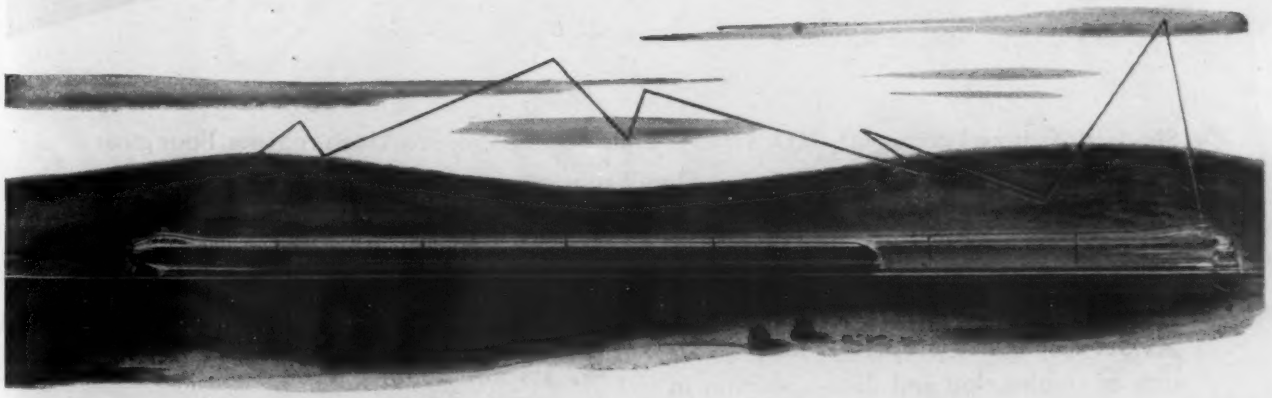
NAME .....

STREET ..... CITY ..... STATE .....

FIRST TO DEVELOP
V.H.F. RADIO
FOR RAILROADS

Bendix Radio

now presents a complete, practical, performance-proved railway communication system for every type of installation



V.H.F. (Very High Frequency) Radio for railroads has successfully passed through its apprenticeship and thoroughly proved its right to be called the latest and greatest advance in railroad communications. And now a complete system—backed by experience gained in hundreds of thousands of miles of testing on America's major railroads—is ready for production. Compact, easily installed, surprisingly low-priced, the Bendix Radio V.H.F. train communication system meets any railway communication problem. Get the facts—find out how performance-proved V.H.F. Radio by Bendix can improve operating efficiency. Write direct to

BENDIX RADIO DIVISION, BALTIMORE 4, MARYLAND

Listen to "MEN OF VISION" *every week over CBS.*

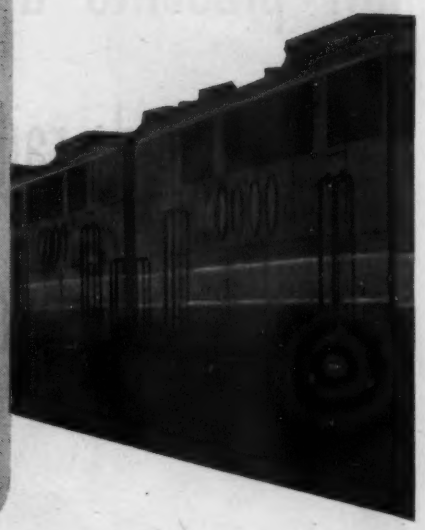
BENDIX RADIO

Bendix AVIATION CORPORATION

Northwest to War

No road is more prominent in transcontinental freight traffic to the great Northwest than Chicago, Milwaukee, St. Paul and Pacific. Its dependable movement of long, heavily loaded trains has been accomplished with notable operating efficiency.

Today, "Milwaukee's" giant Diesels are mainstays for the bigger job of moving still heavier war tonnage to Pacific seaports. "Milwaukee" uses Sinclair Gascon GL-HD Oil... a *safe* lubricant for Diesel locomotives in continuous heavy duty operation.



Sinclair's famous Gascon GL-HD, a compounded Gascon, assures clean engines. Four most important factors for the most efficient Diesel lubrication are built into Gascon GL-HD:

1. Its detergent qualities remove deposits from pistons and engine walls.

2. Its dispersion properties keep products of combustion and decomposition in suspension preventing clogged filter screens and formation of sludge.

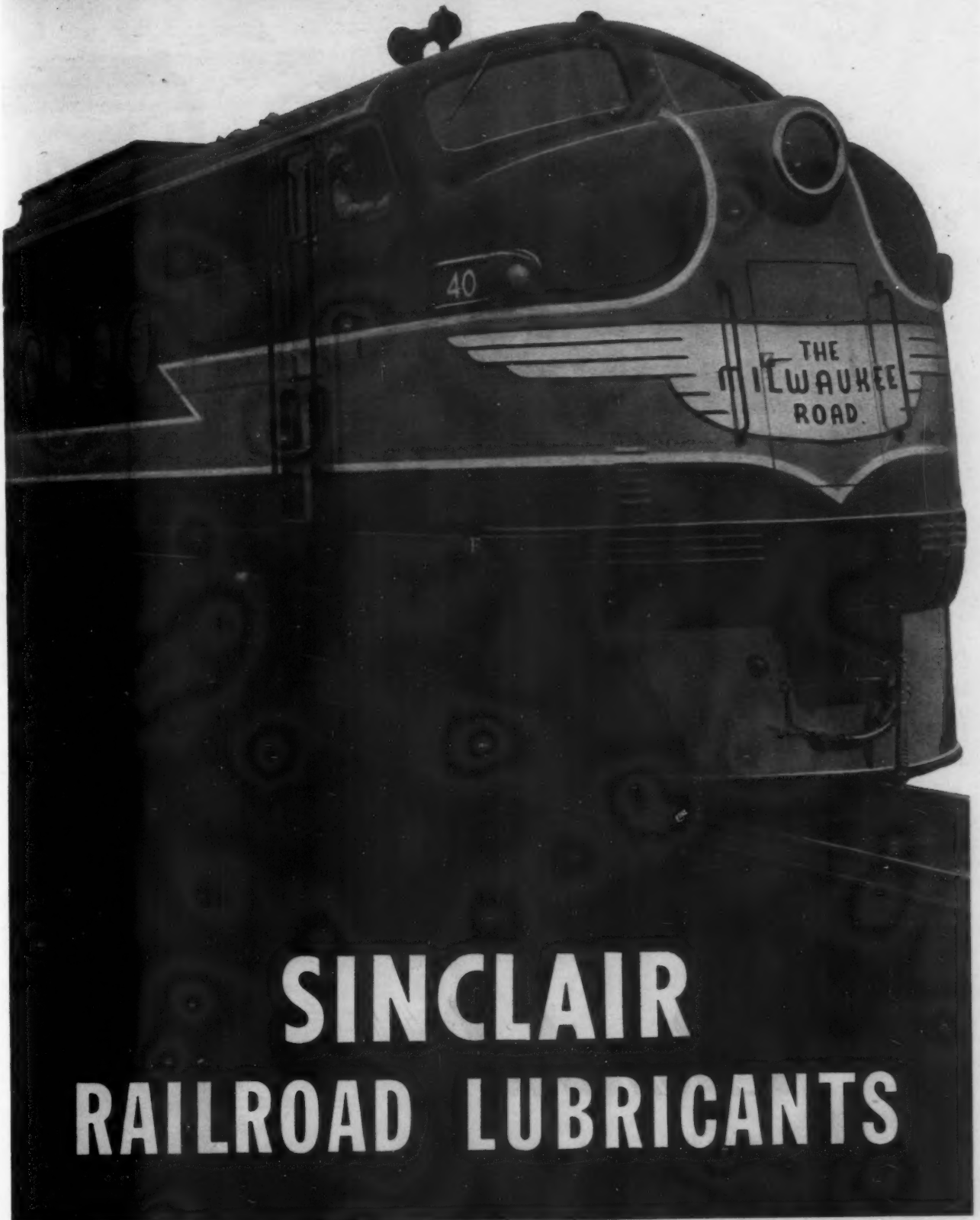
3. Its anti-oxidant characteristics avoid oxidation of the oil.

4. Its non-foaming qualities prevent build-up of oil temperature and keep oil at its true level.

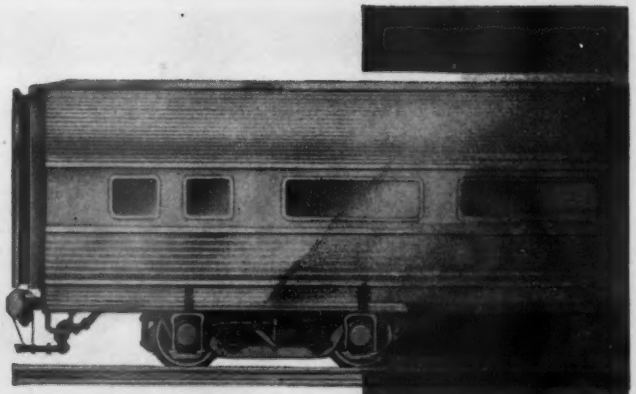
Gascon GL-HD was especially developed for lasting, dependable Diesel lubrication under continuous heavy duty operation. Its wear-prevention characteristics hold down expensive replacement and maintenance costs.

SINCLAIR REFINING COMPANY, *RAILWAY SALES*, NEW YORK · CHICAGO · ST. LOUIS · HOUSTON

WITH MILWAUKEE...



SINCLAIR
RAILROAD LUBRICANTS



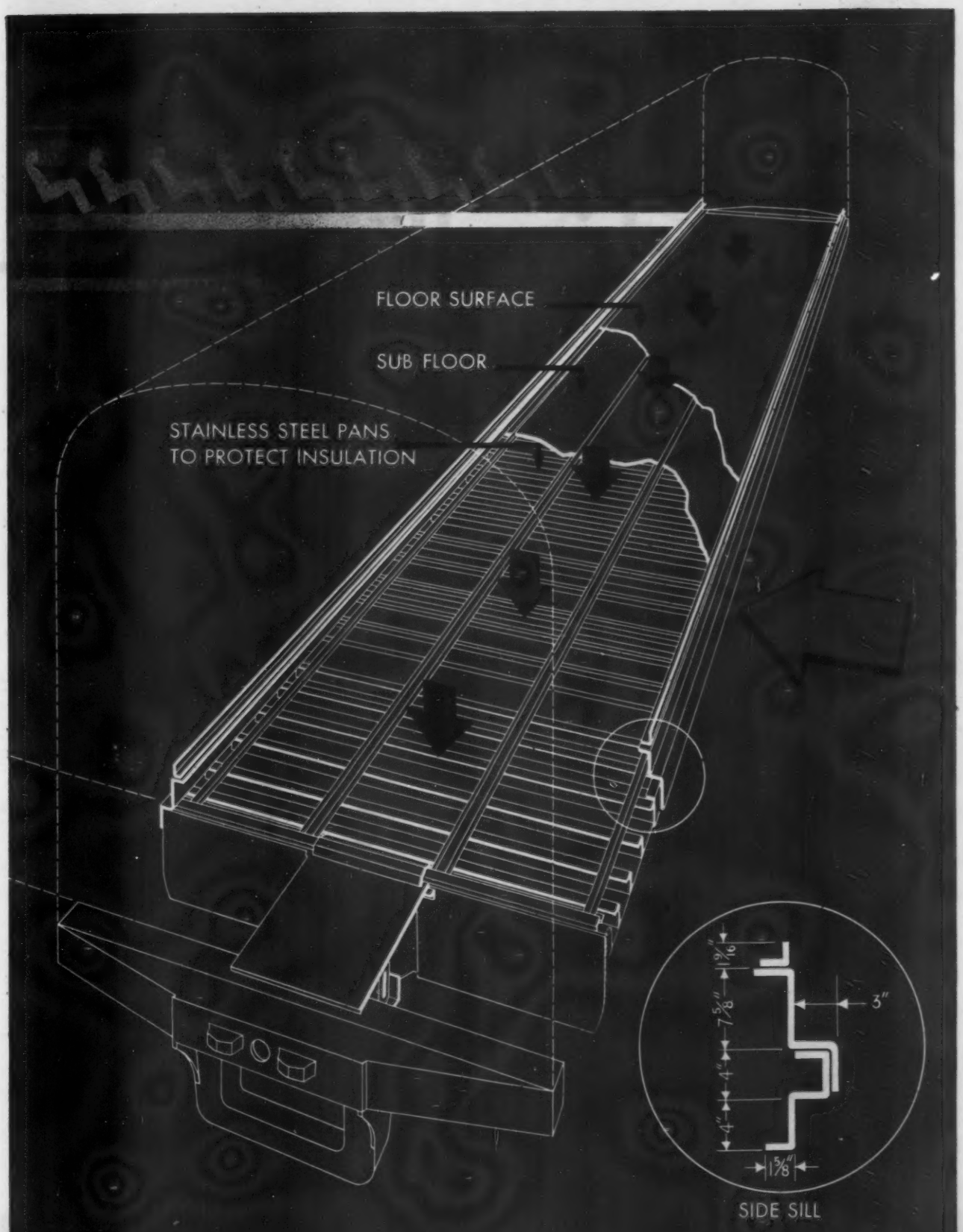
BUDD BUILDS *STRONGEST, SAFEST* FLOOR

Although the primary function of the Budd car floor is to carry vertical loads, it is designed also to provide continuous resistance to crushing loads from the side.

Consisting of a series of high tensile stainless steel members that continuously support the side sill against side blows, these members serve as a shear panel between the two side sills and the center sill, equivalent to a one-eighth inch mild steel sub-floor.

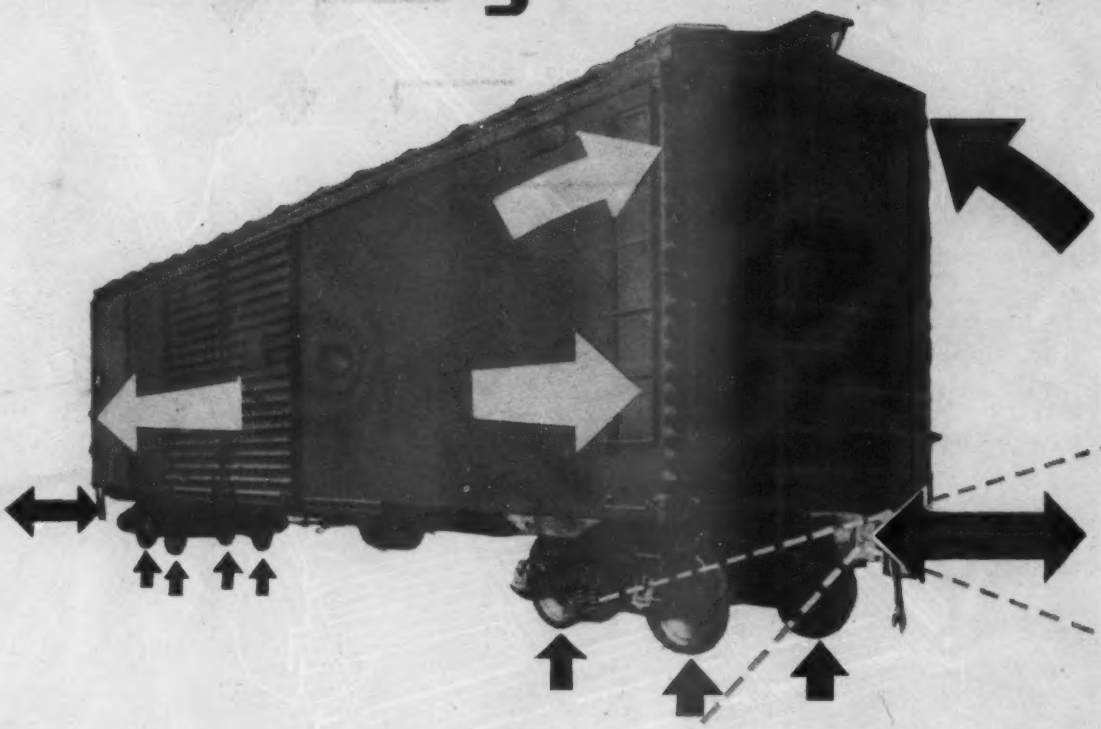
In case one complete side of the car should be destroyed, the center sill, plus the remaining side frame and floor, will sustain the car structure and continue to resist the lateral blow with strength equivalent to that of two 27 inch deep structural I beams, each beam weighing 90 pounds per running foot.

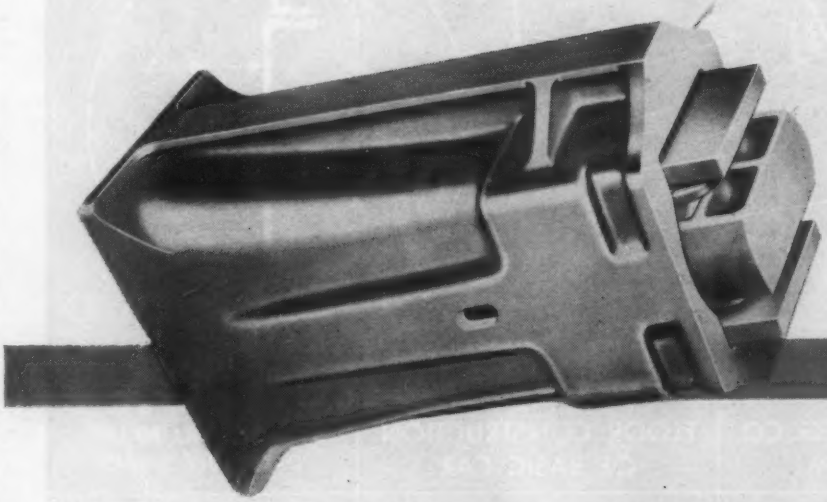
No cars of the same weight, built of any other material can equal the strength and safety of Budd Stainless Steel cars. Edward G. Budd Manufacturing Company, Philadelphia, Pa.



EDW. G. BUDD MFG. CO. PHILADELPHIA, PA.	FLOOR CONSTRUCTION OF BASIC CAR	DRAWING NO. BD-1005 DATE: JULY 5, 1945	
DETROIT CHICAGO WASHINGTON NEW YORK ST. LOUIS SAN FRANCISCO		DRAWN	APPROVED

Absorbing the shocks





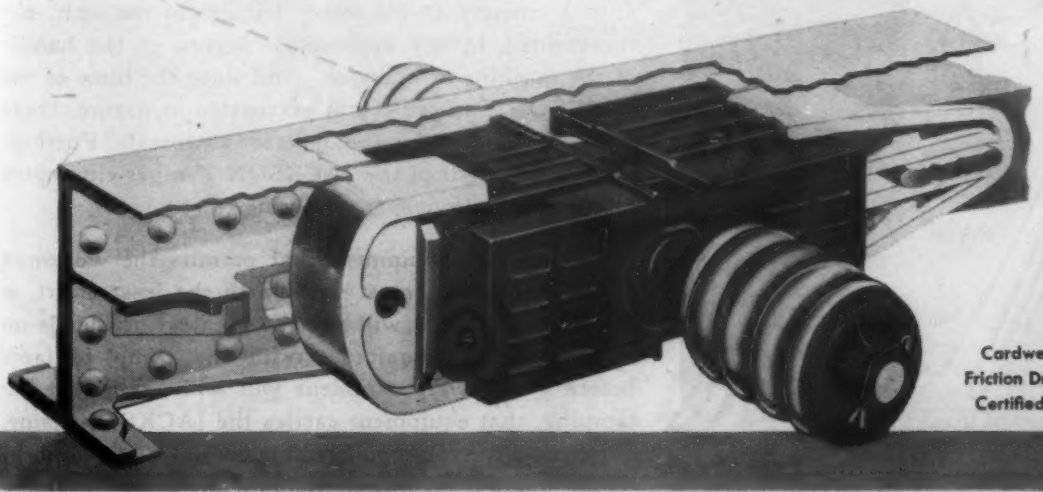
Westinghouse
NY-11F Friction Draft Gear
Certified A. A. R.

from Every Direction

Cardwell and Westinghouse Friction Draft Gears and Bolster Springs absorb and reduce shocks from *every* direction—buffing, starting, roadbed shocks and side sway — increasing the safety of car movements and preventing damage to cars and ladings.

Over 98% of the cars in freight carrying service are A. A. R. construction, and over 96% have Friction Draft Gears.

Cardwell Friction Bolster Spring Type A



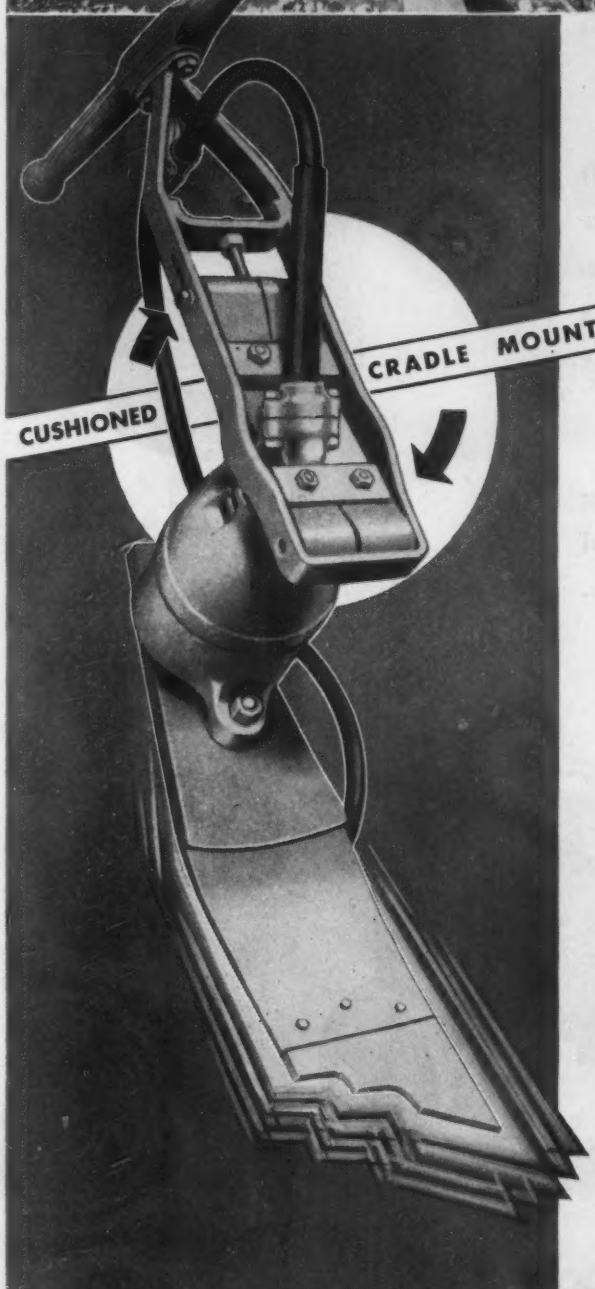
Cardwell M-25 Friction Draft Gear Certified A. A. R.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

TRACKMEN *prefer*

JACKSON VIBRATORY *Tampers*

CUSHIONED CRADLE MOUNTING *Eliminates Shock* AT THE HANDLE



It's an easy-to-check fact that once a workman has used JACKSON Tampers, he usually prefers them to every other medium for tie tamping. And the answer is quite simple; JACKSON Tampers are easier to operate, cause less fatigue.

With the motor unit of the JACKSON Tamper cradle-mounted, the unique vibratory action that places all types of ballast so firmly and rapidly, is confined almost entirely to the lower portion of the unit, not transmitted, in any appreciable degree, to the handle of the machine or operator. And since the blow of the JACKSON Tamper is not percussive in nature, there is no "kick-back" for the operator to absorb. Furthermore, the weight of the JACKSON Tamper eliminates all necessity of pushing or forcing the tool.

Obviously, the equipment that permits the workman to accomplish the most work with the least effort, is the equipment that will pay the greatest dividends on the investment required. With the complete facts before you we are confident you will agree that for tamping, that equipment carries the JACKSON name. Why not write for complete data on JACKSON Vibratory Tampers and Power Plants and how to use them. There's no obligation, of course.

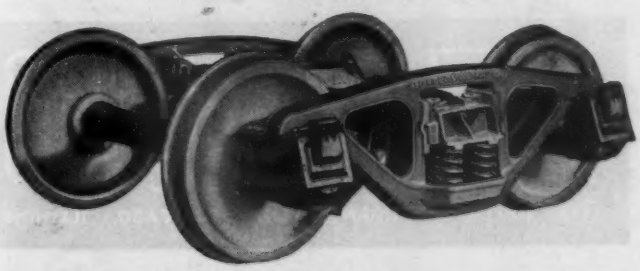
ELECTRIC TAMPER & EQUIPMENT CO., LUDINGTON, MICH.

*More than 50,000 closely charted miles of performance testing and over forty years of design, development, and production experience are combined in the A.S.F. Ride-Control Truck (A-3)**

MINT-MARK OF ⬡ FINE CAST STEEL

* The modern truck for every type of freight service at any speed and under all loads.

A·S·F *Ride-Control* TRUCK



LONG SPRING TRAVEL · CONSTANT FRICTION CONTROL

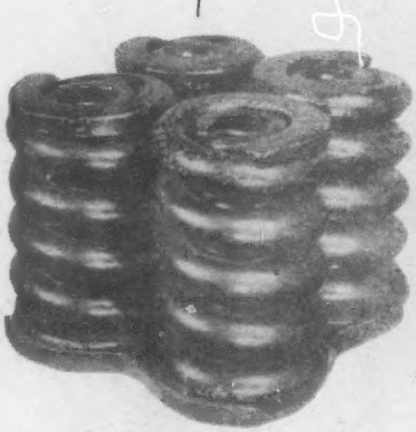
AMERICAN STEEL FOUNDRIES

CHICAGO

You can cut this bolster spring action

DOWN to this

This is what Oscillation Curves prove about the movement of your spring groups in operation.



A.A.R. STANDARD SPRING GROUP

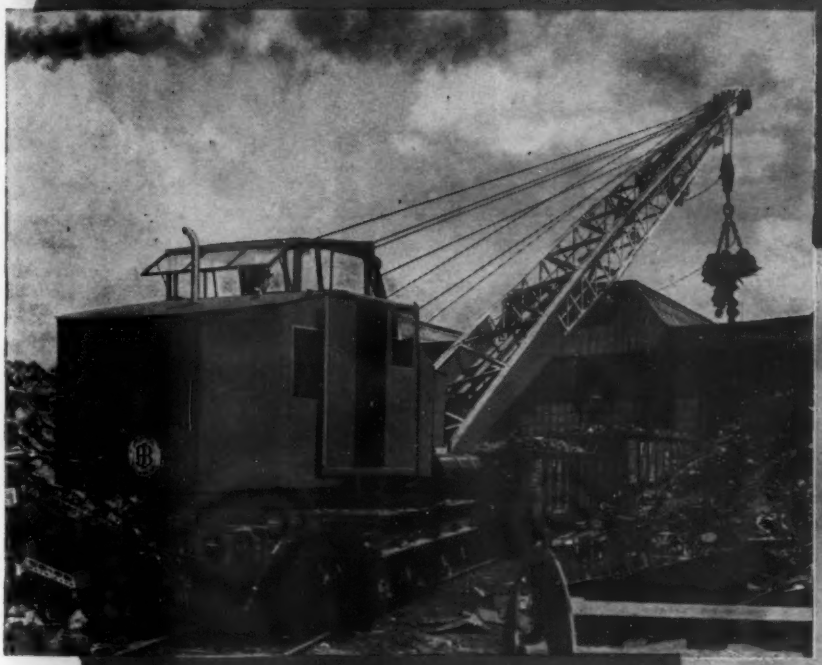
HOLLAND SNUBBER SPRING AND 3 A.A.R. SPRINGS

Style A-6-A Holland *Volute* Snubber Springs

HOLLAND COMPANY

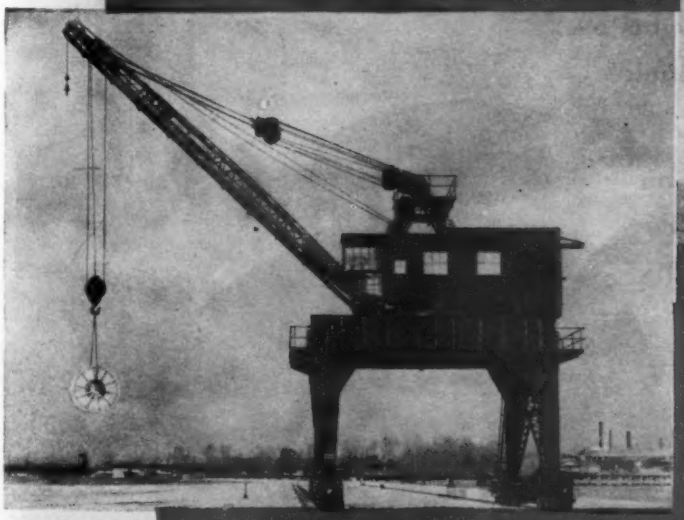
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

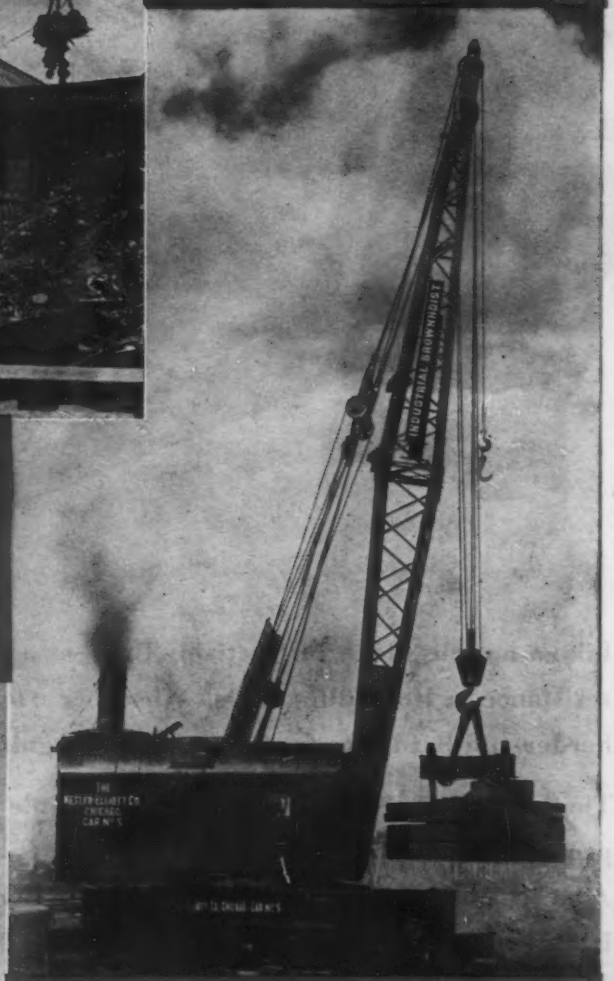
I.B. MAKES TOUGH JOBS EASY!



Handling scrap iron with a magnet, aggregates with a bucket or miscellaneous materials with a hook, I.B. diesel locomotive cranes (left) are known the country over for their speed, durability and low cost operation. Monitor-type cab allows operator 360° visibility.

Power to lift heavy loads, rugged construction and dependability to stay on the job day after day are engineered right into the I.B. Type N 75 ton steam locomotive crane shown at right. Constructed especially for high-speed erection work, this unit is equipped with air-operated clutches, and its two-speed slewing motion permits accurate control for spotting heavy loads.





Another big, powerful I.B. Crane that makes tough material handling jobs easy is this husky 6 motor electric powered machine mounted on a traveling portal pier. Handles 26 tons at 30 foot radius and 18 tons at 61 foot radius. Whether your material handling requirements call for coal and ore bridges, car dumpers, or Locomotive Cranes get the facts first from I. B.

INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

INDUSTRIAL BROWNHOIST CORP. • BAY CITY, MICH. • District Offices: New York, Philadelphia, Cleveland, Chicago • Agencies: Detroit, Birmingham, Houston, Denver, Los Angeles, San Francisco, Seattle, Vancouver, B.C., Winnipeg, Canadian Brownhoist Ltd., Montreal, Quebec.

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Like a muscle which instinctively tightens against resistance, a Houdaille* Shock Absorber "fights back" harder and harder as forces mount in magnitude.

That's why the Houdaille hydraulic principle has proved so effective during the past ten years on America's most famous streamliners. Improved Houdaille instruments for vertical and lateral control are now available.

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HOUDAILLE-HERSHEY CORPORATION
MAKERS OF HYDRAULIC CONTROLS
BUFFALO 11, NEW YORK

*Pronounced—Hoo-dye

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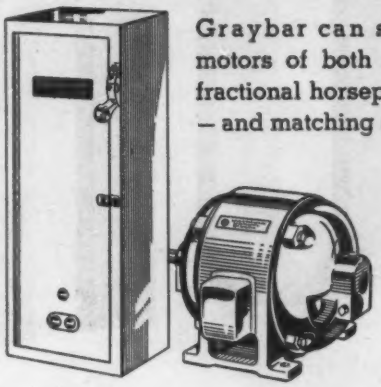
MOTORS AND CONTROLS



Graybar can supply G-E motors of both integral and fractional horsepower ratings — and matching control units, including the latest electronic types.

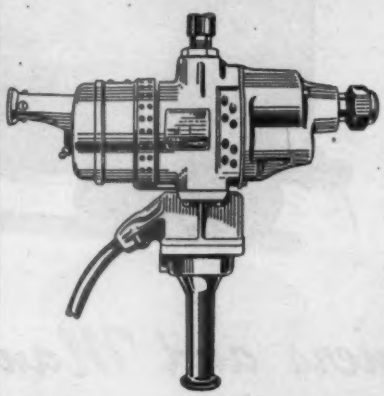
LIGHTING EQUIPMENT AND LAMPS

Graybar has specialized incandescent, fluorescent, and mercury units — and matching G-E Mazda lamps — for both general and local-area shop lighting. Lighting transformers, controls. Portable lamp guards. Flashlights.

WELDING MACHINES AND ELECTRODES

Graybar offers Wilson arc welding machines (AC and DC), a complete line of arc welding accessories and supplies, and Graybar Electrodes for all your electric welding jobs.

PORTABLE ELECTRIC TOOLS



Via Graybar you can get many types of electric drills, saws, screw drivers, nibblers, hammers, and soldering irons. Also, bench grinders, and hand-operated tools of all types.

...and repair-shop SUPPLIES

The Graybar Railroad Specialist near you can supply everything electrical for your repair shops — including all types of wire and cable, connectors, lugs, tape, fuses, conduit and fittings. Graybar's nationwide distribution network also affords local delivery of railway communication apparatus and everything in pole-line supplies and construction tools. *Graybar Electric Company, Graybar Building, New York 17, N. Y.* 4570

via GraybaR

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● Most painting by railroads goes smoothly if the work is done by experienced craftsmen in accordance with the directions of the paint producer. But vexing problems are encountered occasionally—due to the use of paints in ways for which they were not intended—incomplete preparation or improper priming of surfaces—faulty schedules—or many other reasons not caused by the paint itself.

As a leading producer of paint products used by the nation's railroads, The Glidden Company began years ago to interest itself in helping the carriers answer such painting problems. From this developed the Glidden Railroad Technical Service—a service which has never proved more helpful than today, when the burden of war transport has made it necessary for the railroads to keep time out for the painting of equipment to an absolute minimum.

Glidden Railroad Technical Service is available to any railroad. Whatever the problem involving paint or painting procedures, we will see that you get prompt attention through the nearest of our eight strategically located plants and research laboratories. Phone, wire or write us.

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HERE'S a ductway which effectively withstands the corrosive action of all types of soil normally encountered in cable installation.

This advantage of Transite Ducts is shown in a series of tests conducted over a two-year period by an independent research agency. Through cinder fills, salt marshes, peat bogs, clay, loam and many other aggressive soils, laboratory men found that these inorganic asbestos-cement ducts actually became stronger, more durable with age.

Transite Ducts are also unaffected by electrolysis. In addition, they have a permanently smooth bore which makes cable pulls easy and speeds up replacements. Easy handling and rapid, economical installation are assured by their light weight and long lengths.

MADE IN TWO TYPES: Conduit, for exposed work and for use underground without concrete encasement; and Korduct, for installation in concrete.

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For full information on Transite Ducts, write for Data Book DS-410. Address Johns-Manville at New York, Chicago, Cleveland, St. Louis, or San Francisco.

JOHNS-MANVILLE JM PRODUCTS

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87 YEARS OF SERVICE TO TRANSPORTATION

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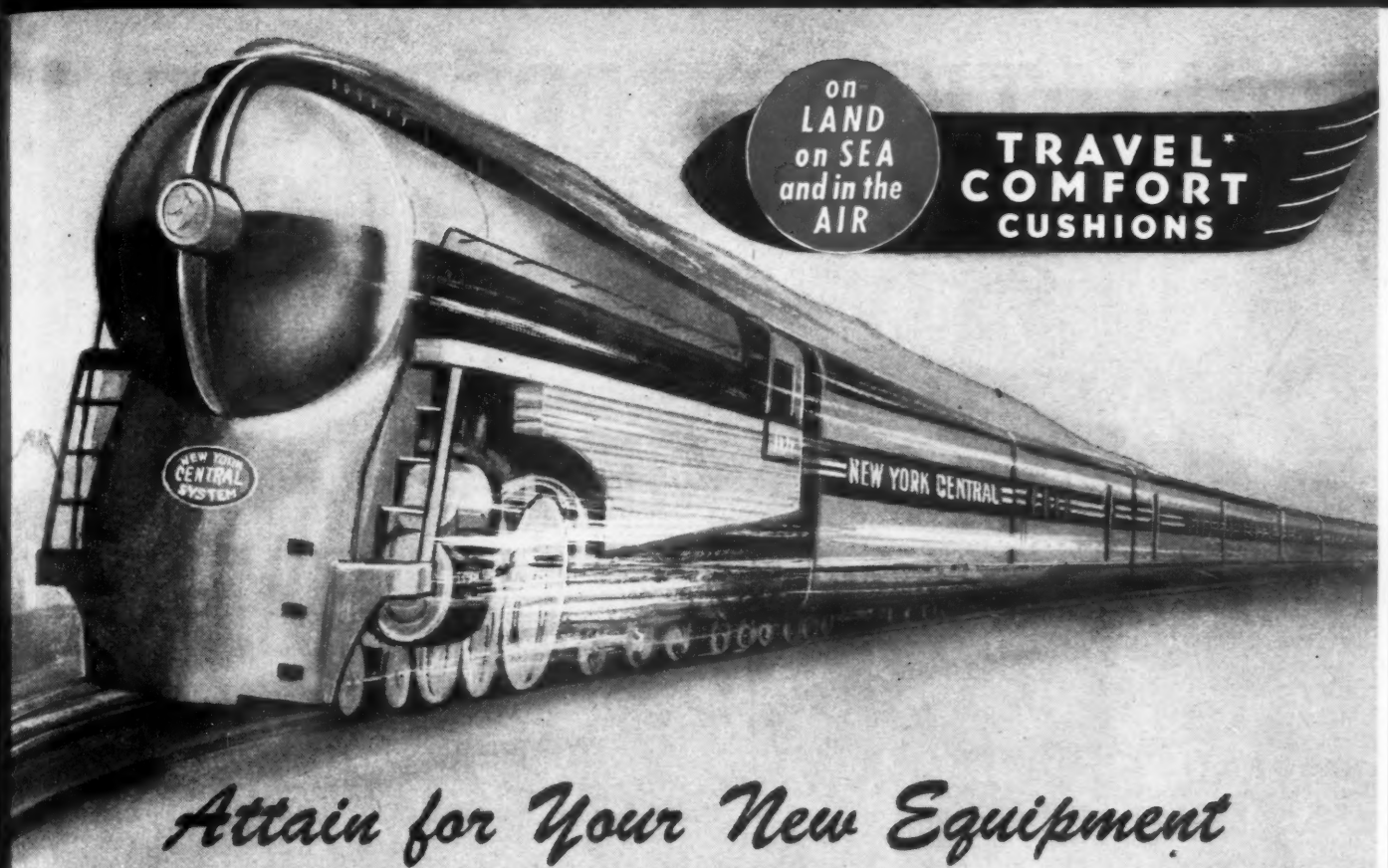

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TRAVEL COMFORT CUSHIONS* are designed and engineered for each specific job they are to perform. Quality of all materials, expert workmanship and vigilant inspection assures durability, uniformity and unexcelled service . . .

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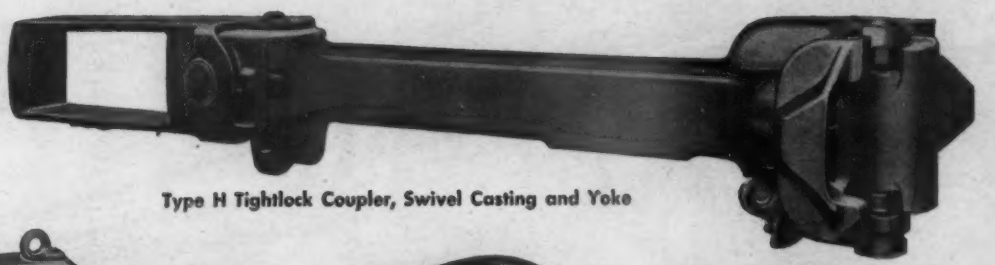
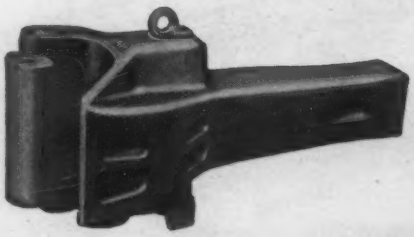


Type H Tightlock Coupler, Swivel Casting and Yoke

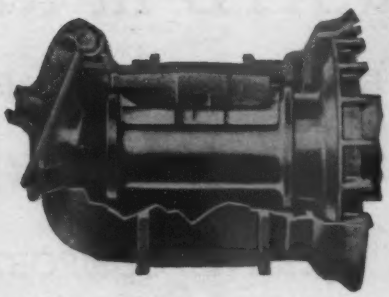


A. A. R. Std. E. Coupler

Naco Spun Steel Car Wheel

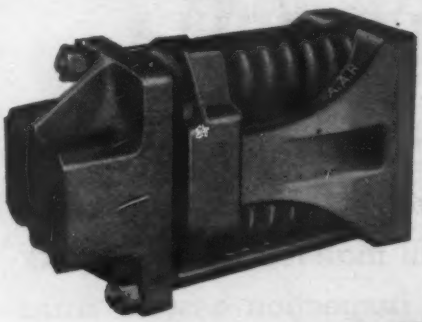
A. A. R. Alternate Std. E. Coupler

A. A. R. Std. Vertical Plane Horizontal Key Yoke

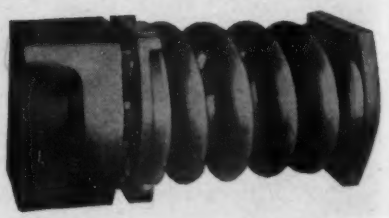


National Journal Box with Deflecting Fan and Flexo No. 2 Lid

A. A. R. Alternate Std. Vertical Plane Swivel Yoke



M-17-A Draft Gear
A. A. R. Approved



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Super-Aire Speaker

DIRECT as an arrow to the target—that's the way your voice can reach any point in a vast area with the G-E Super-Aire Speaker. The G-E Super-Aire Speaker is a complete public address system in compact and economical form.

Ruggedly designed for hard field usage, in any climate or weather, it can be employed in the tough day-by-day jobs of freight yard traffic control, harbor control, giant dam construction projects and a host of similar widespread operations. Even the precision voice element can "take it" without fracturing under the assault of terrific shock or vibration.

Where no power supply is available, a small gas engine can take over the work of operating the compressor and furnishing power for the amplifier. Mobility is just one among the many advantages of the Super-Aire Speaker that makes it the perfect unit for the job.

The G-E Super-Aire Speaker is modern—and today it is *available* "must" equipment on large projects.

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See your G-E distributor for Universal Radio Parts, P. A. Systems, Crystals, Receiving, Industrial and Transmitting Tubes, Laboratory and Service Test Equipment.

GENERAL ELECTRIC

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Electronics Department RA8
General Electric, Syracuse, N. Y.
We are interested in further information concerning the G-E Super-Aire Speaker for
Our own use
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Company.....

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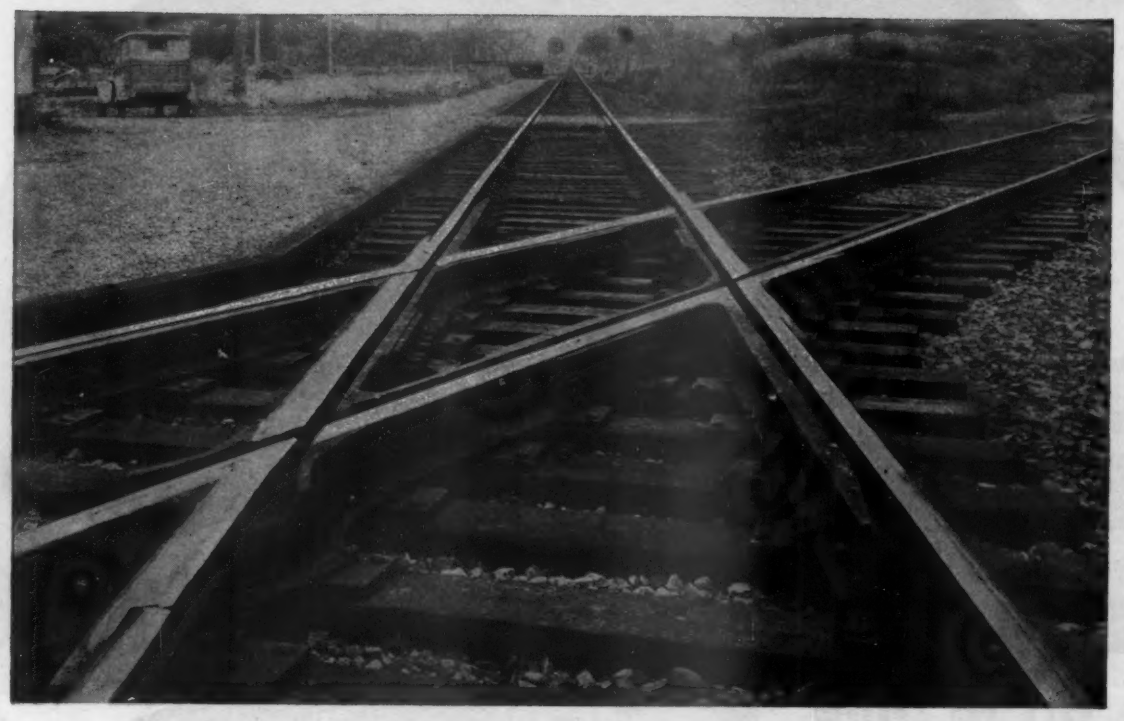
FABREEKA



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FABREEKA increases the life of the points through cushioning the impacts from wheels. FABREEKA'S high damping value insures cushioning without bounce. . . . Mechanical wear of the ties is almost eliminated by this use of FABREEKA under tie plates or castings. . . . Reports show that FABREEKA frequently doubles the life of crossings and halves maintenance costs.

Write for our Engineering Book: FABREEKA for Impact Shock, Vibration & Noise

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A name worth remembering

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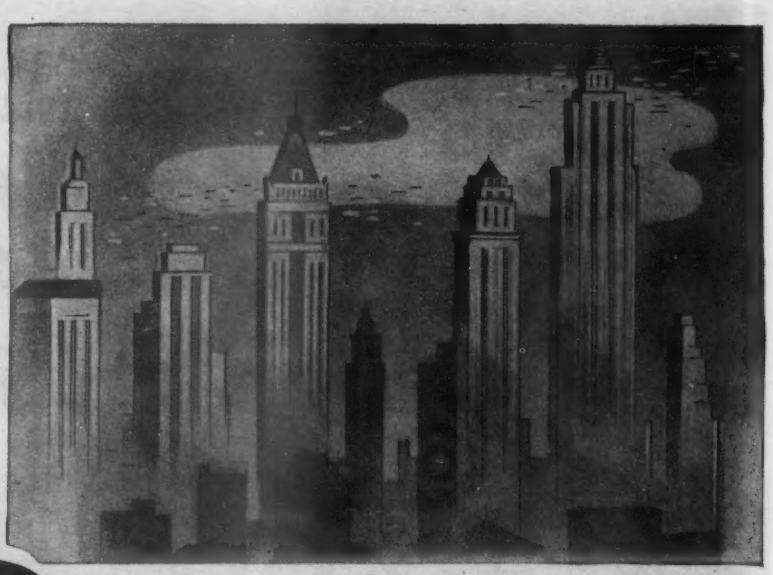

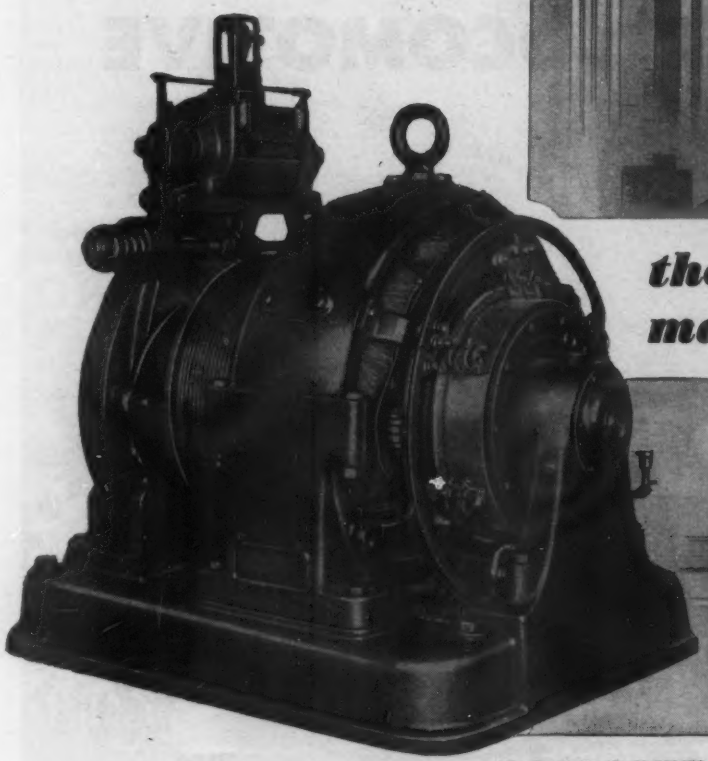

the machine that helped make skylines . . .

now serves small buildings, too

The gearless elevator machine, first designed by Otis Elevator Company, was the result of a demand for faster and more efficient vertical transportation in tall buildings.

During the past 43 years, the smooth, quiet performance, and the economical operation of this machine have earned it universal recognition and acceptance. For these reasons, many Architects and Engineers today specify Otis Gearless Elevators *for smaller buildings* — whenever performance of outstanding quality is required.

Stores, Hospitals, Hotels, and many other buildings—whether of a few stories or many — can now benefit by the life-long operating smoothness and efficiency of Otis Gearless Elevators.

Otis representatives are ready now to cooperate with Architects and building owners . . . to recommend the equipment best suited to individual needs. For the finest in vertical transportation tomorrow, call your Otis representative TODAY.

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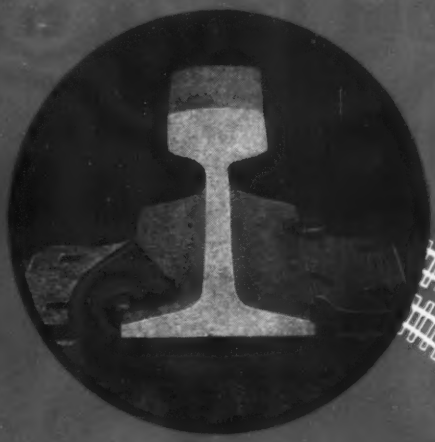

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RAIL ANCHORS
Lead to
Safety and Economy
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BARBER "Monocast" Side Bearings

BARBER "Monocast" Side Bearings improve the riding qualities of freight cars by minimizing car body roll, side bearing friction, rail wear, and wheel flange wear.

The housing is cast integral with the bolster without extra cost. The "Monocast" rollers and wear plates are made of tough, drop-forged, heat-treated steel. Proper adjustment either upward or downward requires only a slight jacking-up of the car body.

Better, safer, economical freight service is possible by specifying Barber "Monocast" Side Bearings for your equipment.

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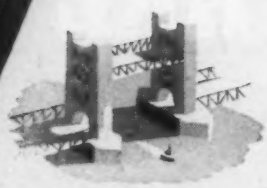
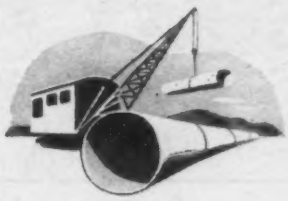
UNUSUAL STEEL JOBS HANDLED QUICKLY, CAPABLY

Here are examples of the unusual and specialized steel jobs that Consolidated Steel Corporation is prepared to help plan and fabricate for you *now*.

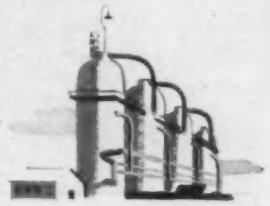


BRIDGES

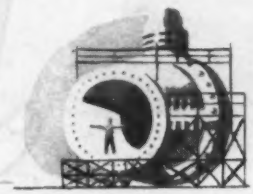
INDUSTRIAL BUILDINGS



PIPE LINES



PETROLEUM EQUIPMENT



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For precision steel fabrication–handled quickly and capably–call in Consolidated Steel Corporation, 5700 South Eastern Avenue, Los Angeles 22, Calif. Other plants at Long Beach, Wilmington, Newport Beach, Calif.; Orange, Texas.

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SYPHON LOCOMOTIVES ARE BETTER

Syphons produce more boiler capacity with **less weight, less steel, less labor and less cost,** and for equivalent results assure greater economy in service and maintenance than larger boilers without Syphons, plus safety from boiler explosion.

VIRGINIAN RAILWAY COMPANY . . .

NEW LOCOMOTIVES ARE SYPHON EQUIPPED

Locomotive Firebox Company

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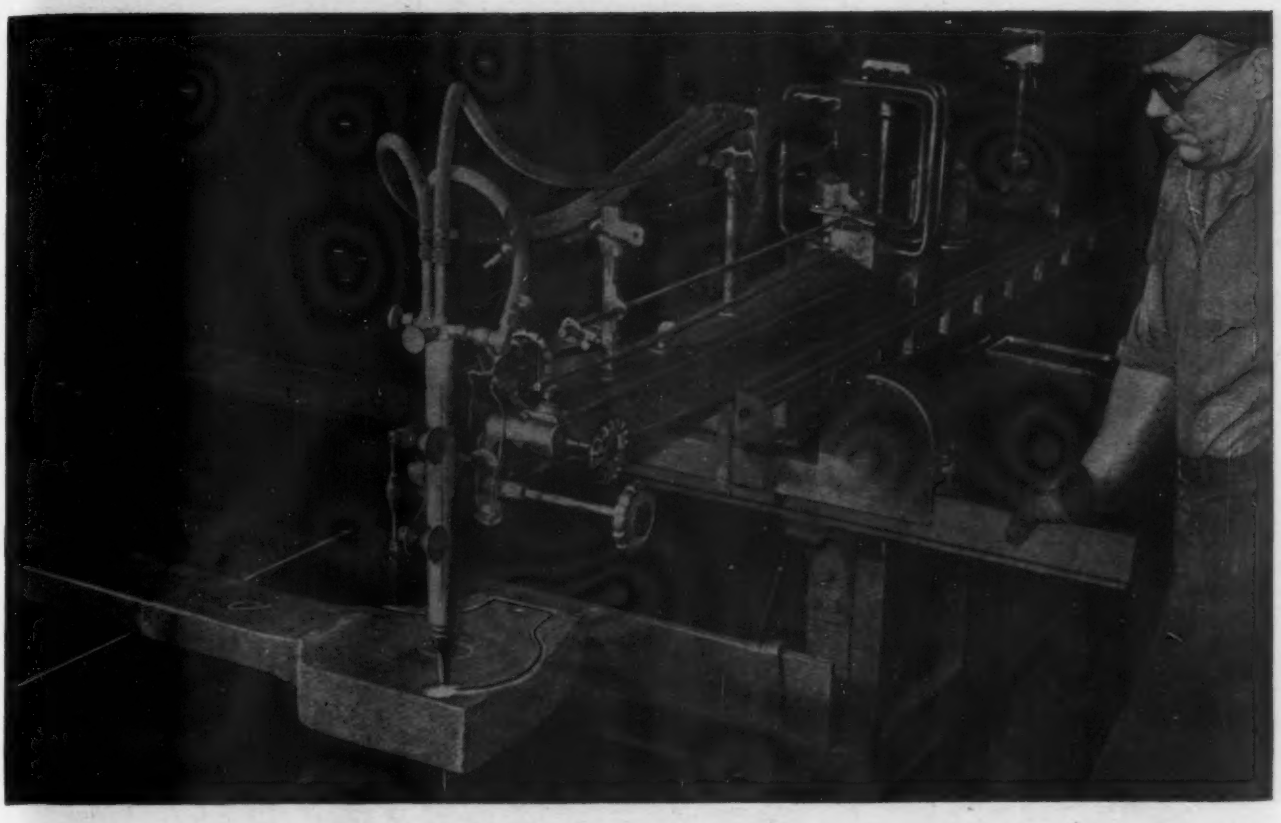

PRODUCE PARTS . . .
Quickly and Economically by Oxweld's Mechanized Shape-Cutting

• The oxy-acetylene flame, guided by a templet, automatically cuts steel parts of many sizes and shapes with greater accuracy, speed, and economy than is possible with other methods. The illustration shows an OXWELD machine flame-cutting a locomotive side rod. Any commercially used thickness of steel may be cut. Parts cut by Oxweld's procedures have clean, smooth edges which usually require little or no machining.

Where quantities of identical parts are required, speed and economy are achieved by mounting several cutting blowpipes on one machine or by simultaneous cutting of tightly clamped piles of plates.

Oxweld instructors have had years of shop training and experience. Ask your representative to tell you how many of the parts you need can be shape-cut with substantial savings in time and cost.

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SINCE 1912 THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

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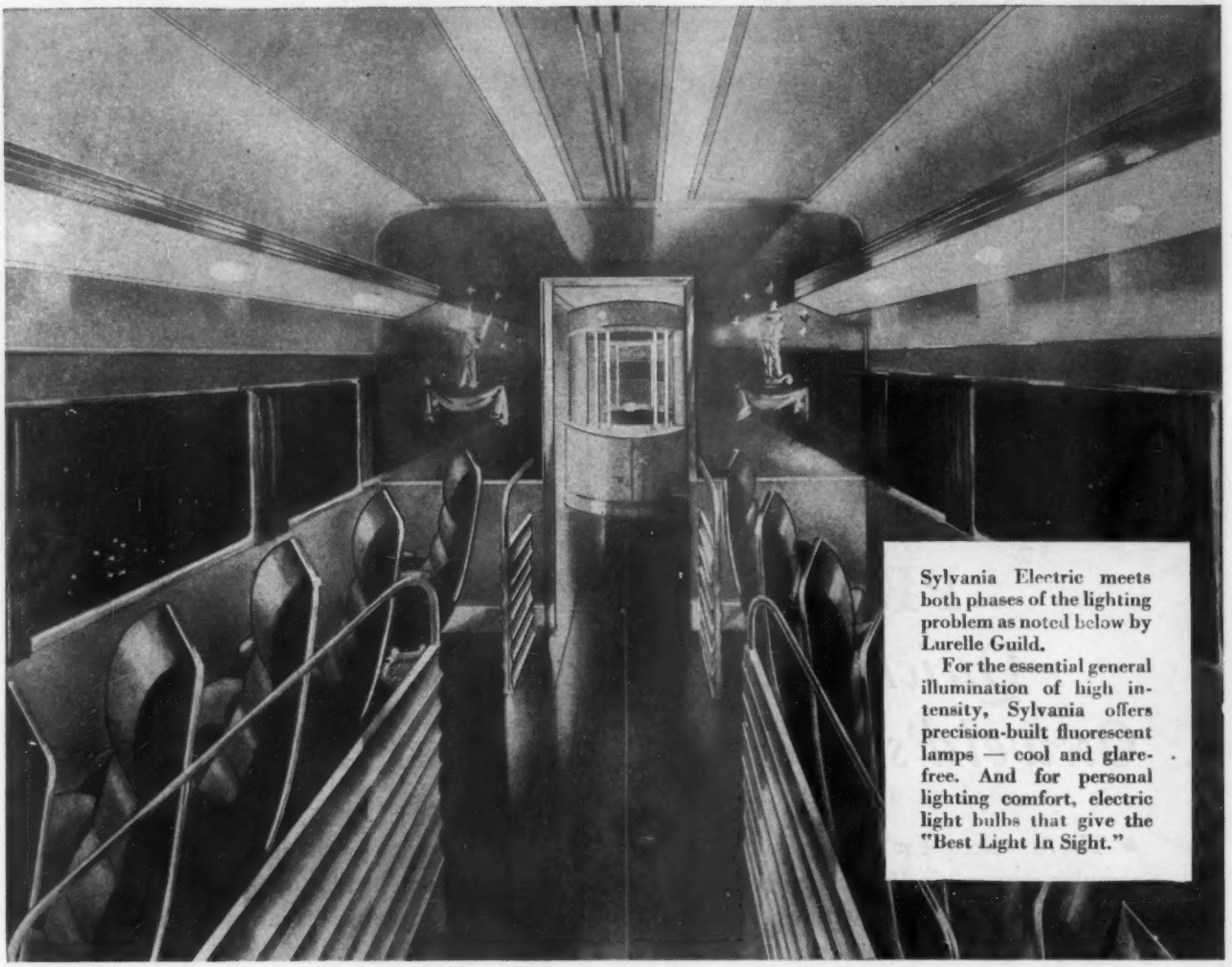
Railway Lighting Ideas

by LURELLE GUILD



Sylvania Electric meets both phases of the lighting problem as noted below by Lurelle Guild.

For the essential general illumination of high intensity, Sylvania offers precision-built fluorescent lamps — cool and glare-free. And for personal lighting comfort, electric light bulbs that give the "Best Light In Sight."

Fluorescent Lamps and Electric Light Bulbs by SYLVANIA

"IN approaching the problem of modern railway lighting, two fundamentals should be kept in mind," suggests Lurelle Guild, noted industrial designer.

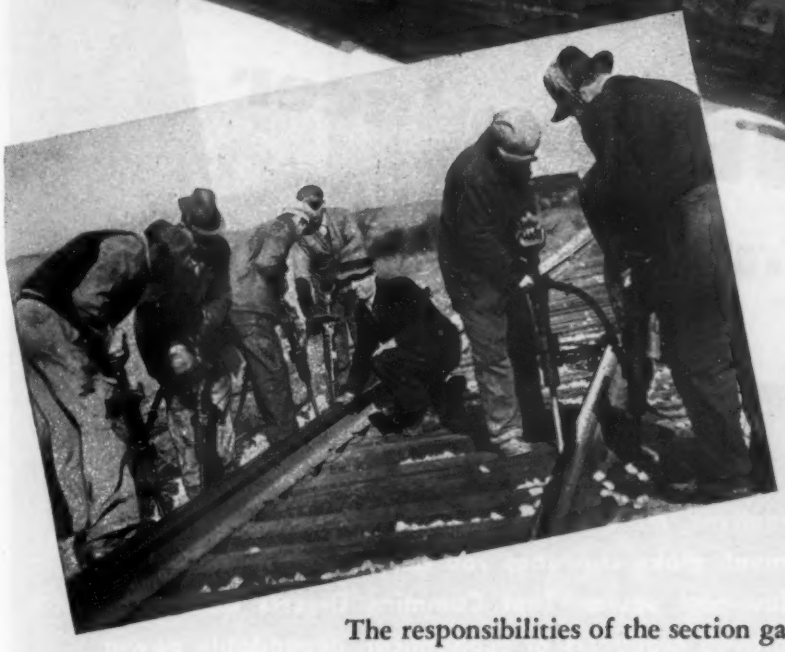
These are—and we quote Mr. Guild—"First, provision should be made for overall, brilliant illumination, as afforded by strips of fluorescent lighting extending throughout the full length of the car.

"The second basic consideration would be to supply each passenger with restful, though ample, lighting for maximum individual reading comfort. This would be produced by a recessed electric light bulb —covered by a lens—over each accommodation." (Note illustration above.)

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

AIR TAMPERS *help*



solve a SECTION GANG *problem*

The responsibilities of the section gang have greatly increased. The manpower shortage, coupled with the heaviest schedules ever carried by the railroads, has meant that the greatest portion of the all-important track maintenance must now be shouldered by the small section gang. To enable them to maintain more track and still turn out high-quality work, many railroads are making full use of compressed air power and air tampers.

The most popular tie tamper is the Ingersoll-Rand Model MT-3, which weighs only 42 pounds complete with bar. It has sufficient power to tamp the heaviest ballast under any condition of lift. A section gang using MT-3's and a modern I-R track compressor can cut surfacing time 50-60%. Certainly such performance warrants your serious consideration.

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

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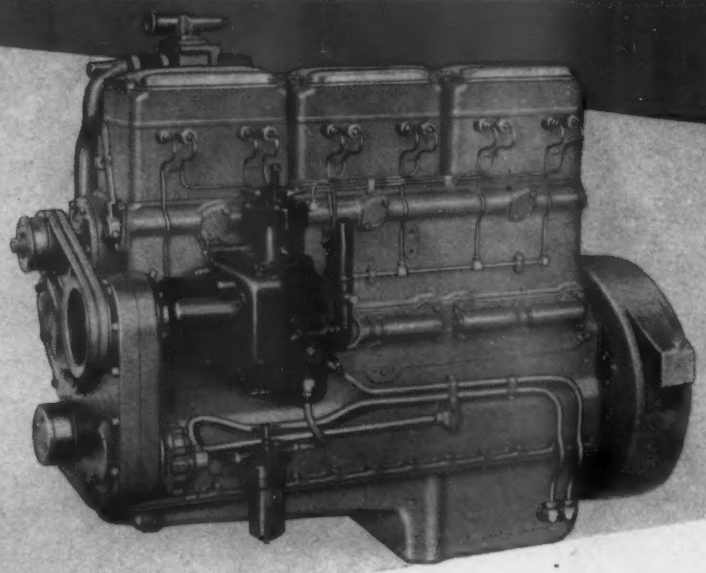
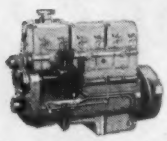
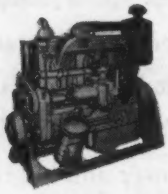
COMPRESSORS • TURBO BLOWERS • CONDENSERS • AIR TOOLS • ROCK DRILLS • CENTRIFUGAL PUMPS • OIL AND GAS ENGINES



The PROVED producer of low-cost power



Model HBI-600: 6 cylinders, 4 1/2" x 6", 150 hp. at 1800 rpm. (maximum).



Model NHI-600: 6 cylinders, 5 1/4" x 6", 200 hp. at 2100 rpm. (maximum).

Model NHBS-600 (supercharged): 6 cylinders, 5 1/2" x 6", 275 hp. at 2100 rpm. (maximum).

The line of Cummins Dependable Diesels includes locomotive, automotive, portable, stationary and marine models—50 to 275 hp.

In choosing the power for your new switching locomotives, motor trains or maintenance-of-way equipment, make sure that you get a *proved* producer of low-cost power. That Cummins Diesels qualify as proved producers of economical, dependable power has been demonstrated by their 12-year performance record in railroad service. As a result of that record, Cummins Dependable Diesels are now offered as standard or optional power by leading manufacturers of railroad equipment.

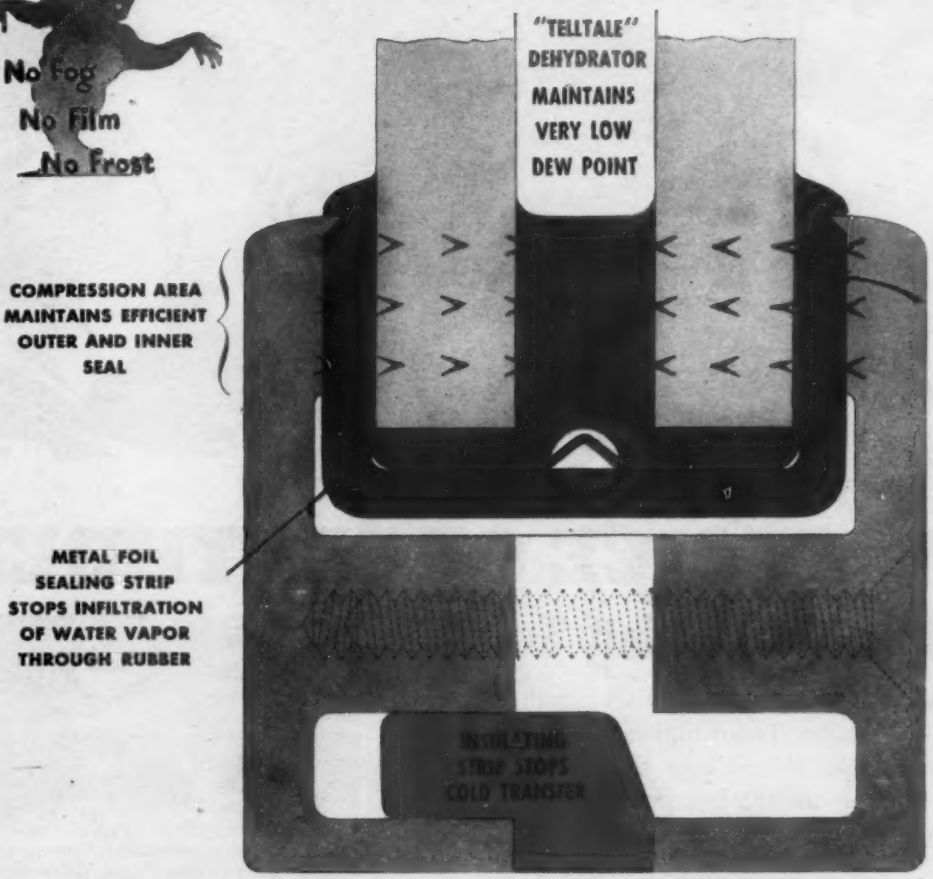
CUMMINS ENGINE COMPANY, INC., Columbus, Ind.

CUMMINS Dependable DIESELS

SINCE 1918...PIONEER OF PROFITABLE POWER THROUGH HIGH SPEED DIESELS

DOUBLE Sealed

For No Fog . . No Film . . No Frost
New Edwards Dehydrated SASH Unit


"TELLTALE" DEHYDRATOR MAINTAINS VERY LOW DEW POINT
COMPRESSION AREA MAINTAINS EFFICIENT OUTER AND INNER SEAL
GLASS MOUNTED IN FLEXIBLE RUBBER CHANNEL
METAL FOIL SEALING STRIP STOPS INFILTRATION OF WATER VAPOR THROUGH RUBBER
SCREWS TIGHTENED TO PREDETERMINED PRESSURE TO PROVIDE PROPER COMPRESSION, AND TO TAKE UP ALL VARIATIONS
INSULATING STRIP STOPS COLD TRANSFER

Incorporated in this newly designed and engineered Edwards postwar Sash Unit are these features:

NO FOG . . . Very low dew point, constantly maintained.

NO FILM . . No moisture to leave scum on inner glass surfaces.

NO FROST . Insulated — no outer to inner metal contact.

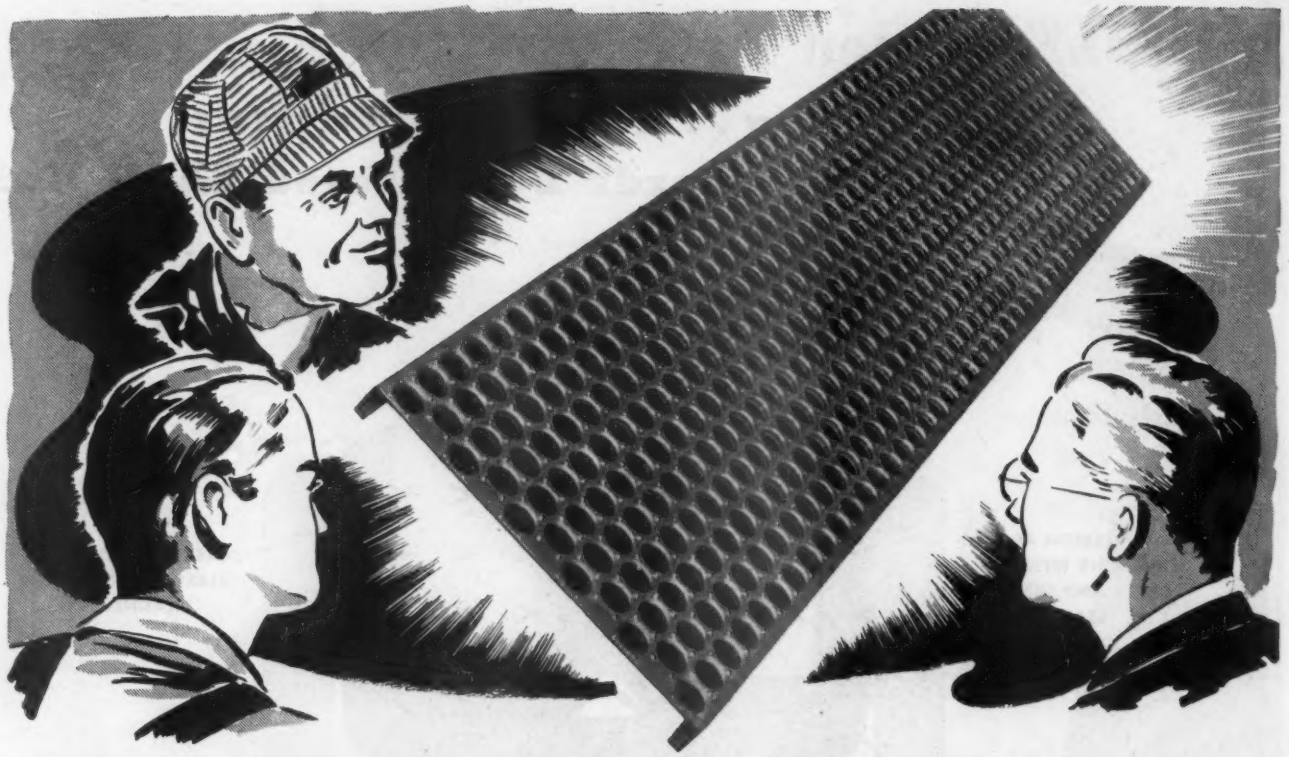
It will pay you to investigate the many advantages of this new and better Sash Unit, designed and ruggedly constructed to last for the life of the equipment. . . . For complete information, write to: The O. M. Edwards Company, Inc., Syracuse, New York.

Edwards Sash encloses pilot compartments on the world's largest bomber.

EDWARDS SASH

THE EYES OF TRANSPORTATION

SASH FOR EVERY TYPE OF TRANSPORTATION — ON LAND, ON THE SEAS, IN THE AIR



FIRST CHOICE OF ALL THREE

Morton "Open-Grip" Safety Tread

Safety, convenience and low cost are the factors that give Morton "Open-Grip" Safety Tread highest rating among railroad men everywhere. Here's how this self-clearing, all-weather tread for car running boards, brake steps and platforms stacks up with men who know it best.

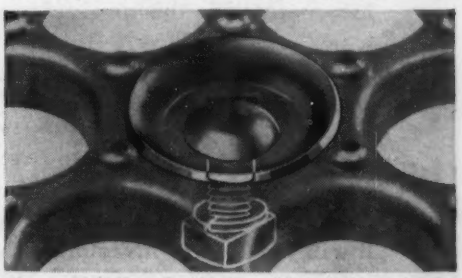
TRAINMEN: Safer footing provided by "Open-Grip" in all kinds of weather means fewer accidents to train crews. Curved, self-clearing surfaces of circular openings provide no hold for snow or ice. Raised perforated buttons afford positive traction.

SHOP MEN: One-piece construction of "Open-Grip" makes it easy to install, reduces maintenance requirements. The simple cup and bolt fastening device saves labor and allows speedy replacement of damaged sections.

MANAGEMENT: Its relatively light weight holds down original cost of "Open-Grip" tread, adds less deadweight to each car. Low maintenance requirements and ease of installation help bring overall costs down still more.

Get complete details on economically-priced "Open-Grip" tread from our nearest office. Write for prices and delivery dates today.

Cut-away view showing added strength that results from deep drawn flanges around drainage openings. Anti-slip buttons increase safety of tread.



Easy, quick installation is achieved through this special device which fits any of the open areas of the tread. Rotating, elongated bolt slot compensates for ordinary variations in saddle punching.

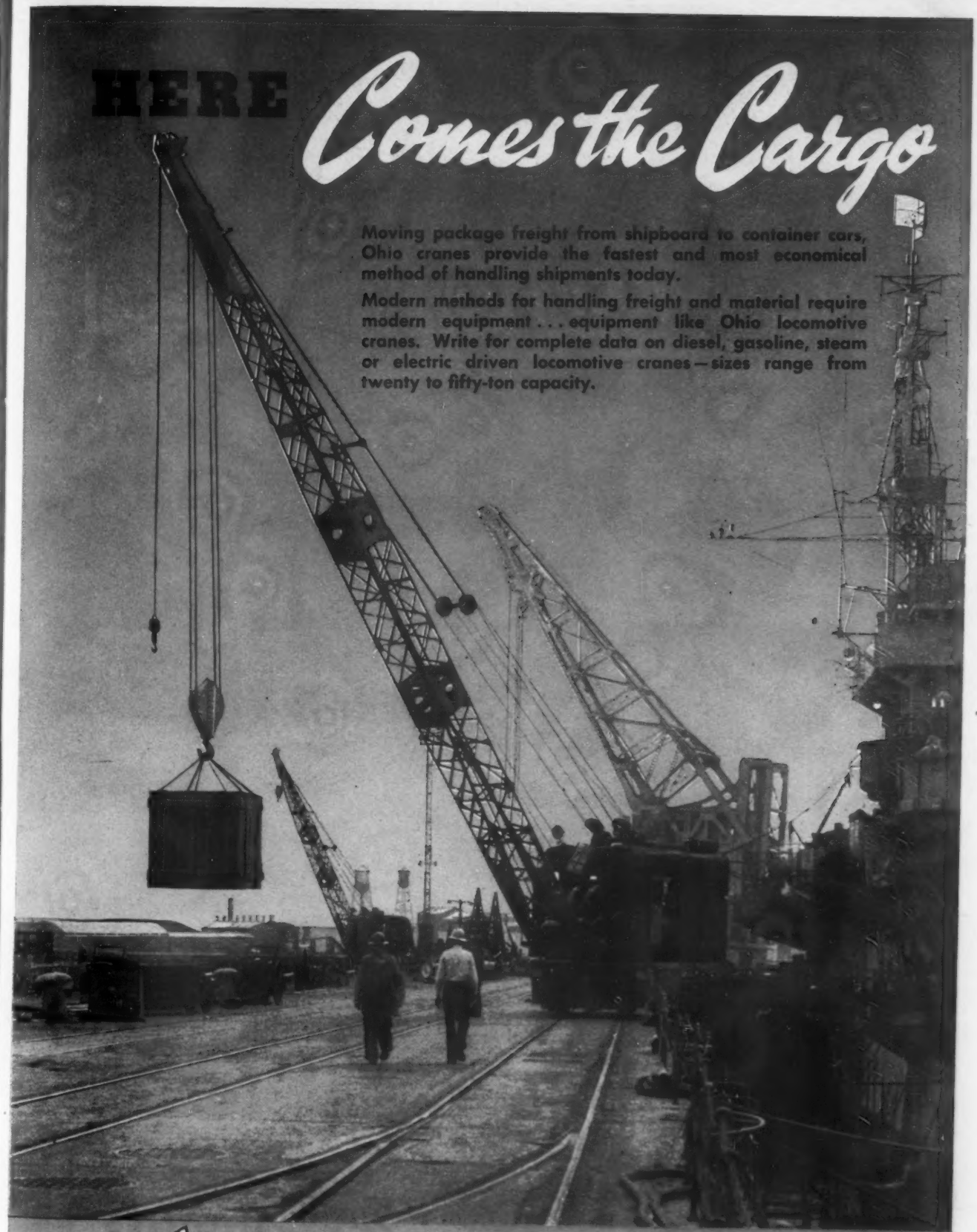
District Sales Offices

New York, N. Y.—30 Church St., Courtland 7-7542
Chicago, Ill.—332 S. Michigan Ave., Wabash 6789
St. Louis, Mo.—Paul Brown Bldg., Central 3348
St. Paul, Minn.—E906 First National Bank Bldg., Cedar 1940
Washington, D.C.—6945 Wisconsin Ave., Bethesda, Md., Wisconsin 7378
San Francisco, Calif.—Room 223, 68 Post Street, Exbrook 0811

MORTON MANUFACTURING CO.

5105 WEST LAKE STREET • CHICAGO 44, ILLINOIS

HERE Comes the Cargo



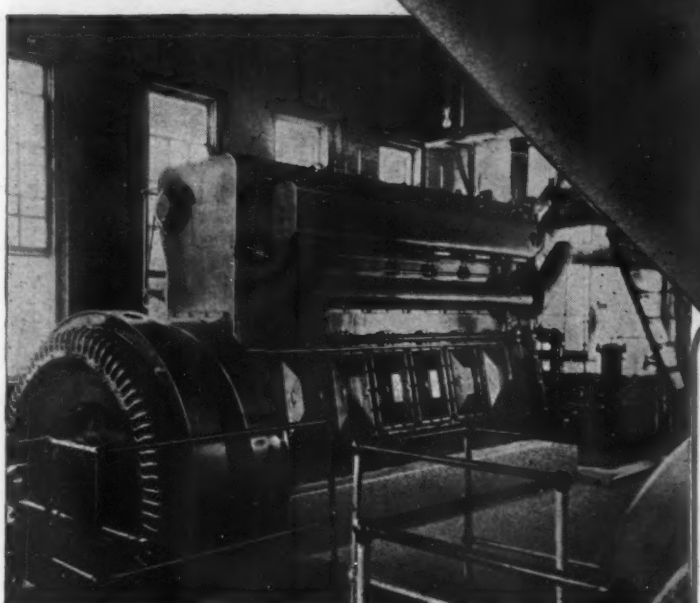
Moving package freight from shipboard to container cars, Ohio cranes provide the fastest and most economical method of handling shipments today.

Modern methods for handling freight and material require modern equipment . . . equipment like Ohio locomotive cranes. Write for complete data on diesel, gasoline, steam or electric driven locomotive cranes—sizes range from twenty to fifty-ton capacity.

OHIO LOCOMOTIVE CRANE COMPANY

Address Dept. R - BUCYRUS, OHIO

A Very *Superior* Diesel



12½" x 15" Superior
Diesel Municipal Installation,
Sandersville, Georgia

SUPERIOR DIESELS • MARINE • STATIONARY • LOCOMOTIVE

Superior **ENGINES**
Division of
THE NATIONAL SUPPLY CO.
Plant and General Sales Office:
Springfield, Ohio

AMCREO TIES

Low maintenance-of-way insurance!

AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY
INCORPORATED

AMCREO
LOWRY PROCESS
CREOSOTED

GEORGIA CREOSOTING COMPANY
INCORPORATED

ADDRESS INQUIRIES TO CHICAGO, ILL., OR LOUISVILLE, KY.

TIES · POLES · PILES · TIMBER

WEIGHING 4 CARS PER MINUTE

YES . . . sometimes five cars a minute are weighed at this scale house equipped with Streeter-Amet Automatic Weight Recorders. Such performance eliminates potential bottlenecks at the scale . . . keeps cars rolling at critical times when they may pile up.

A vital question in railroading is "How many cars can be handled in five minutes, or 15 minutes?" . . . when crews and power are available. Not how many in 24 hours. The Streeter-Amet weight recording equipment answers this question in terms of both speed and economy. Shippers get faster service; the road gets additional profits, enabling it to build up better postwar service for more postwar shippers.

Now is the time to install economy of operation for the days to come and the Streeter-Amet Recorder should be number 1 in a program of low cost operation. As for service, a Streeter-Amet service man goes along with every recorder. A survey of your weighing methods is available now; write or call us for free engineering service.

STREETER-AMET

STREETER-AMET COMPANY
4109 N. Ravenswood Ave. • Chicago 13, Ill.
Automatic Weighers, Recorders, Scales and Services • Founded 1888

CAR AXLES

CAR, LOCOMOTIVE TENDER,

AND LOCOMOTIVE AXLES

Furnished to all specifications

DROP FORGED

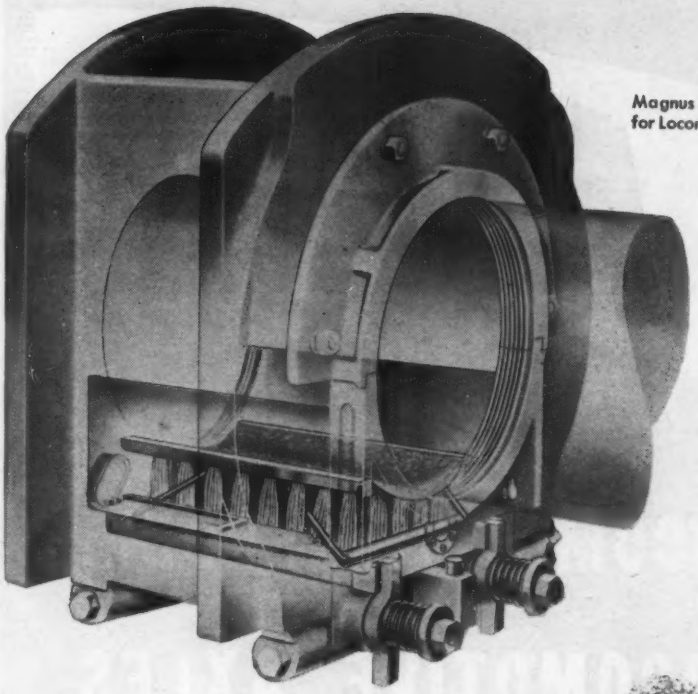
JOURNAL WEDGES CENTER PLATES

Other Car Forgings

STANDARD FORGINGS CORP.

Plant: INDIANA HARBOR STATION, EAST CHICAGO, INDIANA

General Offices: RAILWAY EXCHANGE BLDG., CHICAGO 4, ILL.

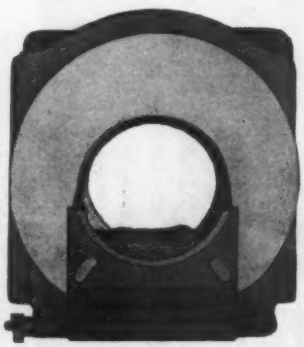


Magnus Oil Lubricator
for Locomotive Journals

Light Viscosity Oil Lubrication

Increases Journal Bearing Life!

Magnus Locomotive Journal Oil Lubricator, utilizing *light viscosity* oil, increases the life of both journal bearings and lateral facings as much as three to five times. As a result, road mileage between classified repairs is approximately doubled, quicker servicing lessens turn-around time, and shopping costs are greatly reduced.



Magnus Satco-Lined Lateral Hub Facing for engine-truck, trailer and driving boxes

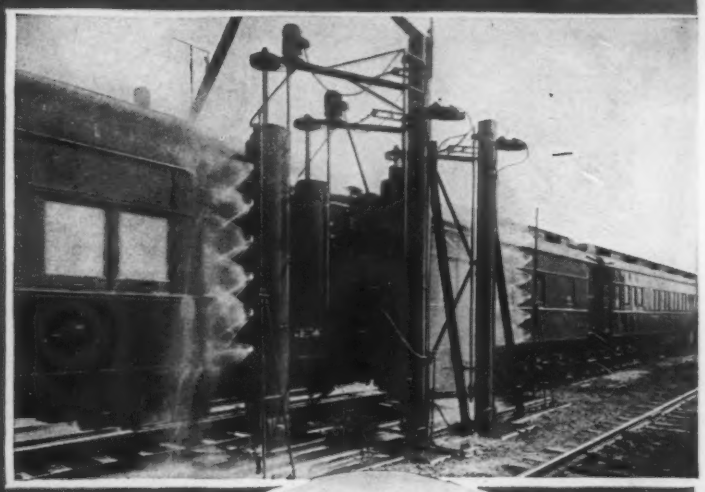
SATCO Bearing Metal

MODERN
HEAVY DUTY
BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

In the solution tank of your Automatic Coach-Washing Equipment

Use Safe Oakite Compound No. 88 *for CLEANING of extra dirty coaches!*



Removal of the many different types of tenacious road film so frequently encountered on surfaces of coaches, stream-liners, power units and tenders can be facilitated by adding a small amount of Oakite Compound No. 88 to the solution tank of your automatic car washing equipment.

Oakite Coach-Washing Materials Safe to Surfaces . . . Economical

Sprayed on surfaces, solutions of Oakite Compound No. 88 quickly act on stubborn road film and importantly contribute to the effectiveness of the mechanical brushing and rinsing operations. If you have already installed or plan to install automatic car washing equipment to SAVE time and REDUCE coach-washing costs, the men of our Railway Service Division will be glad to make tests of Oakite car-washing materials and give you the benefit of their wide experience on this work. Inquiries invited and promptly answered.

TOP PHOTO: *Shows Blackhall automatic car-washing equipment, manufactured by Ross and White Co.*

BOTTOM PHOTO: *Shows Whiting automatic coach-washing equipment, manufactured by Whiting Corporation.*

• • •

Both types of equipment make provision for spraying coaches, streamlined power units, etc., with a cleaning solution preliminary to brushing and rinsing operations. Various Oakite materials are available for adding to cleaning solution tanks.

OAKITE PRODUCTS, INC., WRIGLEY BUILDING, CHICAGO 11, ILL.

In Canada: OAKITE PRODUCTS OF CANADA, LTD. TORONTO: 65 Front St. East—MONTREAL: 1 Van Horne Ave.

OAKITE
RAILWAY SERVICE DIVISION

Do You Remember this Advertisement in 1936?

AFTER 22 YEARS
—they rebuilt the cars
BUILT 1914
REBUILT 1936
—but used the same
SCHAEFER CONNECTIONS
In 1914, the Union Railroad built and equipped 700 gondolas with the only Schaefer Truck Lever Connection—forerunner of the appliance so well recognized today by all railroads.
In 1936, the railroad completely rebuilt the cars—rebuilt the trucks to A. A. R. standards with new Schaefer Truck Levers, Brake Beam Hangers, Wear Protection Plates and Brake Shoe Keys—but the old original Schaefer connections were so slightly worn after 22 years' service that they were straightened to conform to A. A. R. lines and re-applied—good for at least another decade.
If you are interested in foundation brake gear that lasts, specify SCHAEFER for all details. Visit Booth C-11 or write us.
SCHAEFER EQUIPMENT COMPANY
GENERAL OFFICES: KOPPERS BUILDING, PITTSBURGH, PA.
LOOK "U" AND STIRRUP TYPE BRAKE BEAM HANGERS . . . TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS . . . BRAKE ROD JAWS . . . WEAR PLATES . . . BRAKE SHOE KEYS

NOW WE ARE BRINGING IT UP TO DATE

When the original advertisement reproduced here appeared in 1936 the Union Railroad had just completed the rebuilding of 700 gondola cars, which when built in 1914, had been equipped with offset-type Schaefer Truck Lever Connections. By straightening the connections to conform to AAR standards, they were made to fit the rebuilt cars and were again put into service.

In 1936 so little wear was noted that we prophesied that they were good for at least another decade of use. A check-up in 1945 confirmed this fact—these connections are still in service after 31 years of use—a real tribute to the rugged strength and wearability of Schaefer Forged Steel Brake Appliances.

Write for New Illustrated Schaefer Catalog.

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

2 Reasons why

RED LEAD

means Extra Rust Protection...

Why is Red Lead so widely accepted throughout industry as *The* metal protective paint?

Why are paints containing Red Lead so generally specified for safeguarding metal surfaces from the costly ravages of rust?

The reasons are many, but none are more noteworthy than Red Lead's ability to counteract acid conditions and to halt electrochemical action—both prime causes of rusting—as explained at right.

Still another important advantage of Red Lead is that it partially combines with the usual vehicles to form compounds generally known as "lead soaps." Due to their composition and the individual way in which these compounds form, the film obtained is highly water-resistant. In addition, lead soaps contribute to the formation of tough, elastic films that "stick on the job."

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including phenolic and alkyd resin types.

Specify Red Lead for ALL Metal Paints

The value of Red Lead as a rust preventive is most fully realized in a metal paint where it is the only pigment used. However its rust-resistant properties are so pronounced that it also improves any multiple pigment paint. No matter what price you pay, you'll get a better metal paint if it contains Red Lead.

NEUTRALIZES ACID

1 Red Lead has the ability to counteract acid conditions which are recognized as accelerators of rust. Structural steel is exposed to such environments because acid forming compounds are carried by the atmosphere in the form of gas, smoke and moisture. Red Lead has a neutralizing effect on these conditions as it is essentially a *basic* pigment with the ability to develop and maintain, for a prolonged time, a mild alkaline environment at the surface of the metal. Authoritative tests show that, as a result, Red Lead inhibits the process of corrosion. In short, metal paints, too, should "stay on the alkaline side."

2 Another outstanding reason Red Lead means *extra* rust protection is the unique way it shields metal surfaces with a protective film. Rusting is fundamentally an electrochemical process in which weak currents are generated which cause iron to become soluble in the lowest state of oxidation. Red Lead has properties through which this iron is rapidly converted to a stable compound that forms an adherent film. The formation of this protective shield halts electrochemical action, thus preventing further corrosion.

Write for New Booklet

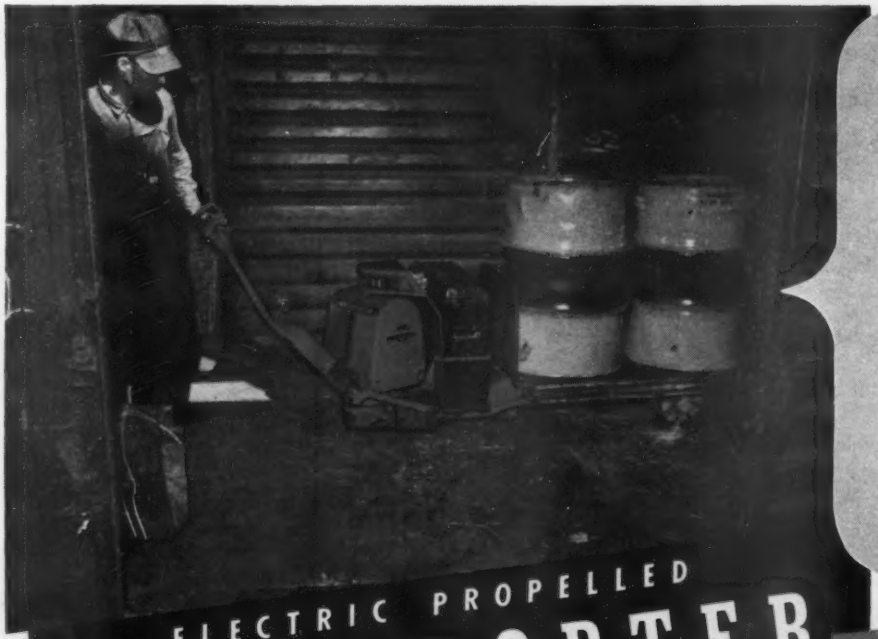
"Red Lead in Corrosion Resistant Paints" is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior metal protection. It also includes typical specification formulas. If you haven't received your copy, address nearest branch listed below.

* * *

The benefit of our extensive experience with metal paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6, Buffalo 3, Chicago 10, Cincinnati 3, Cleveland 13, St. Louis 1, San Francisco 10, Boston 6 (National-Boston Lead Co.); Pittsburgh 30 (National Lead & Oil Co. of Penna.); Philadelphia 7 (John T. Lewis & Bros. Co.)

DUTCH BOY RED LEAD



★ The battery-powered TRANSPORTER maneuvers with ease in narrow aisles and congested areas. Loads totalling tons are moved quickly, easily, and with safety.

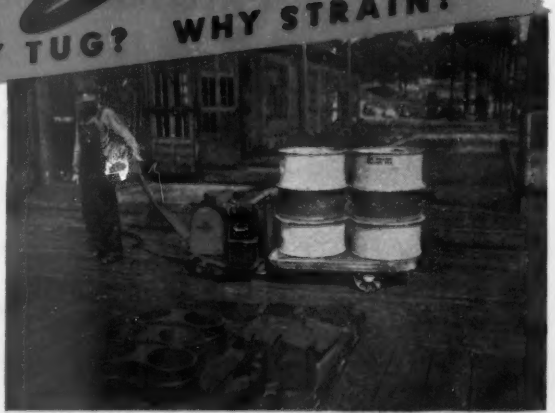
WRITE FOR COMPLETE DETAILS

ELECTRIC PROPELLED

TRANSPORTER

WORKS TO YOUR DAILY ADVANTAGE IN COST AND TIME *Savings*

WHY PUSH? WHY PULL? WHY TUG? WHY STRAIN?



INTO a box car — on with the load and away goes the TRANSPORTER — along the platform to storage. It's just as simple as it sounds and it's only a one-man operation. Many tons per day on short hauls are handled in this manner whether to shipping or from receiving. Pallet loads up to 4000 lbs. — skid platform loads up to 6000 lbs.

- Positive Mechanical Brake with Emergency Control
- Controls in Steering Handle
- Forward and Reverse Speeds
- Front Wheel Power Drive
- Shockless Hydraulic Platform Lift with Easy Foot Control

MANUFACTURERS FOR OVER 38 YEARS *Electric Propelled* INDUSTRIAL TRUCKS

AUTOMATIC TRANSPORTATION CO.

51 WEST 87th STREET CHICAGO 20, ILLINOIS

Division of the Yale & Towne Manufacturing Company

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 119 August 18, 1945 No. 7

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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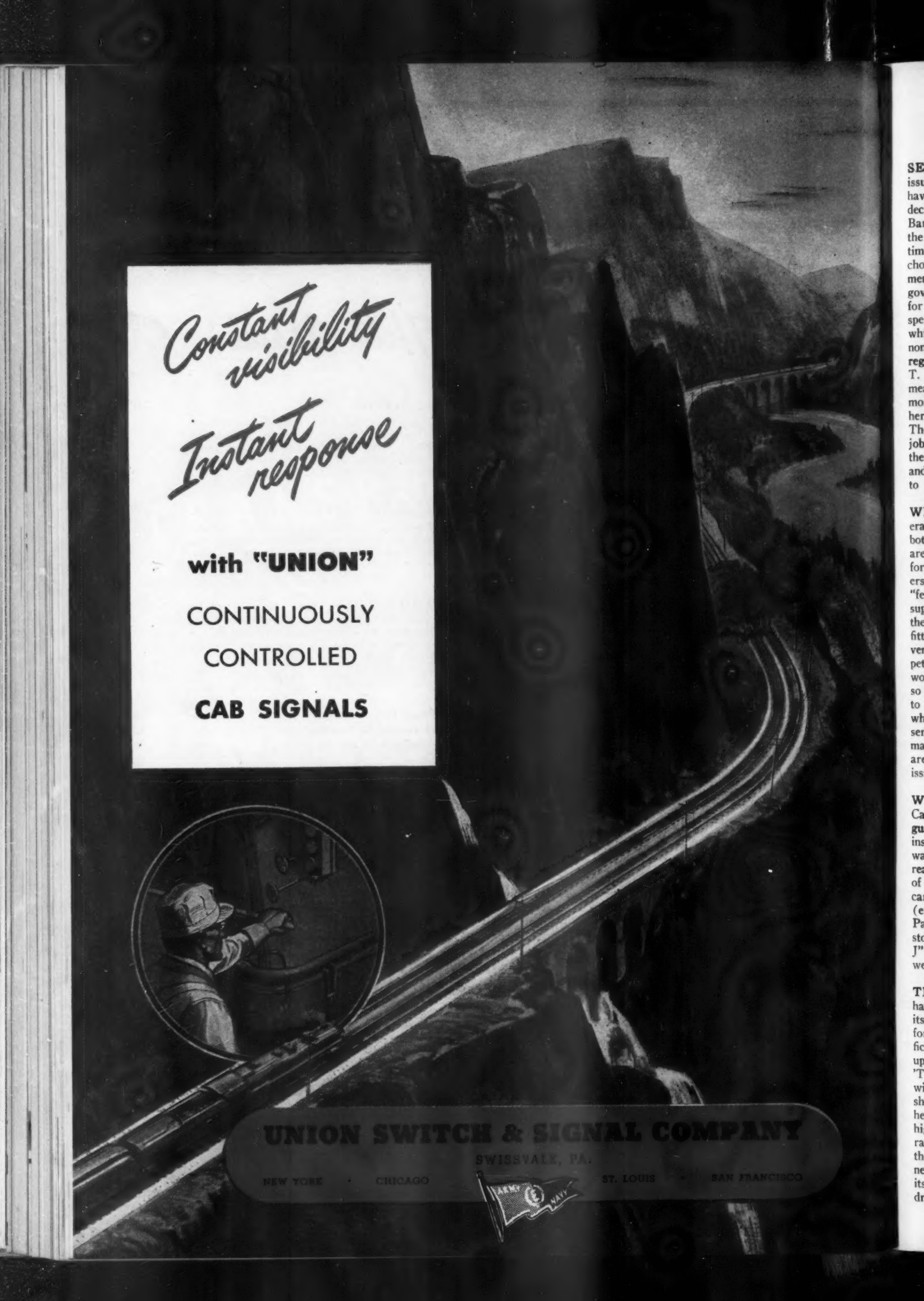
Constant visibility
Instant response
with "UNION"
CONTINUOUSLY
CONTROLLED
CAB SIGNALS
UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.
NEW YORK · CHICAGO · ST. LOUIS · SAN FRANCISCO
ARMY
NAVY

The Week at a Glance

SERFDOM'S ROAD AHEAD: The issue of what kind of America we are to have henceforth has come up for quick decision is a list of bills which Senator Barkley, apparently, is going to push as the New Deal's scheme for assuring peace-time prosperity. The list includes such choice items as the Murray "full employment" bill (which would make the federal government responsible for providing jobs for everybody through unlimited deficit spending); the "valley authority" bills, which would set up federal bosses of economic and "cultural" life in nine other regions, as has already been done in the T. V. A. area; and a half-dozen other measures to give more billions of tax money away. This, as the leading editorial herein indicates, is the New Deal scheme. The American proposal is to leave the job of providing peace-time prosperity to the people themselves, reducing their taxes and taking off their chains to enable them to do the job.

●

WHAT THE OPS WANT: The operating unions have chosen a time when both the railroads and their employees are about to enter upon a desperate fight for the continuance of their status as leaders in transportation, to ask for 47 more "featherbeds" in addition to the extensive supply of those costly furnishings which these unions already enjoy. Flexibility—fitting railroad service to customers' convenience—is the essence of successful competition, and flexibility is what restrictive working rules are designed to prevent; so the railroads are asking the brothers to give up such rules already in effect which tie the carriers' hands in offering a service to defy rivalry. The unions' demands and the railroads' counter-proposals are given in detail in an article in this issue.

●

WAR FREIGHT STOPPED: The Car Service Division, at 9:25 p. m., August 14, acting on War Department orders, instructed the railroads what to do with war freight. Earlier, an embargo had already been issued to halt the movement of munitions. Under the further order, all carload shipments of military materials (except solid fuel and food) to Gulf and Pacific ports and "in transit depots" were stopped—consignments issued under "V-J" permits not included. Navy shipments were cut off in somewhat similar degree.

●

TRANSPORT LESSON: The Army has recently revealed figures showing that its reliance upon highways and waterways for domestic transport has been insignificant compared to its enormous demands upon the railroads. Yet, all through the 'Thirties the railroads rapidly deteriorated without the War Department's having shown any concern. In fact, it actively helped along the process by boosting superhighways and waterways to deprive the railroads of traffic to sustain them against the day when the nation would urgently need maximum railroad capacity to defend its very existence. An editorial herein draws attention to the resourcefulness which prevented this improvidence from resulting in disaster; and suggests that the discontinuance of the Transportation Corps after World War I was the reason why the military interest in adequate domestic transportation was so poorly looked after in the inter-war years. The obviously needed corrective is a continuance of the Transportation Corps, this time, with a voice in the top councils of the War Department, and a responsibility to give advice to government which will forestall action permitting the deterioration of essential services.

●

ECONOMY OF TESTING: The head of testing and research on the Southern, Charles B. Bryant, relates in an article herein what the accomplishments of mature experience have been in providing scientific assurance that the materials the company buys are suited to the performance required of them. A laboratory with convenient equipment for the necessary tests is, of course, provided and Mr. Bryant describes its essential features and operations, along with the work of its 40 employees—mostly technologists—who insure that the Southern gets its money's worth from its purchases. As the author points out, it is usually more economical to ascertain the correct answers to such questions in a laboratory, adequately equipped and staffed, than by the alternative method of chance-taking experience in actual use.

●

SCIENTIFIC CAR CHASING: Even without being there, a little imagination supplies a picture of what a headache car distribution must be on a Western railroad these days. One of our editors has been looking over such things on the Union Pacific, and sets down in an article in this issue what he saw—a big job has been tackled by a program with sufficient skill and ingenuity behind it to make the performance orderly, even if difficult. They keep the cars working, and the system provides protection against discrimination, chance favoritism, and "confiscation" of cars by those not entitled to them.

●

MATERIALS LID IS OFF: While materials control on some scarce items—lumber, crude rubber, textiles and tin will continue for a while—most W. P. B. orders are due to be cancelled "within a few weeks." Such is the announcement of Chairman Krug, reported in our news pages. Inventory controls will be retained to prevent "preemptive buying and stockpiling," but limitations on industrial construction will vanish and so will the brake on the production of consumers' goods, including "consumers' durables." The Army has called off production of railroad equipment for military use—and more help will soon be available to the railroads. Manpower Commissioner McNutt believes railroad employment will rise another 25,000 and that there will occur only a seasonal decline in employment this fall, even if traffic should drop a good deal—because of the prevalence of long hours.

LOCOMOTIVE VIA JUNGLE: Those who have followed land operations in the Orient know that the Japs were knocked out of North Burma early this year—but that there is no railroad connection between North Burma and India; so the railways in North Burma weren't much use to Allied forces with the equipment the Japs had left on them. To put these railroads in service meant getting motive power to them across hundreds of miles of jungle. Lt. Col. M. B. Richardson, in an article in this issue, tells how an outfit under his command got three 2-8-2's over this muddy, hilly route on "highways" which left something to be desired.

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USELESS PROPERTY JUNKED: People who often change residences have little useless furniture—while those who stay put for a few decades usually have several attics and barns full of their accumulations. Railroads fall into the latter category, unless they strive hard to work themselves out of it, and an article herein relates how the C. & N. W. is resolutely removing itself from this status.

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ARNALL'S "PARTICULARS": The state of Georgia has filed what that commonwealth's governor designates as a "bill of particulars" in its suit against the railroads for the alleged injury of existing rate-making practices. His Excellency prays that the railroads be restrained from 13 specific acts of coercion. We record these charges for posterity's sake in our news pages, but if you've read or heard a speech by Thurman Arnold or Wendell Berge you can save time by skipping our report.

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"THIS IS TOMORROW": Such is the caption of an Eastern Air Lines advertisement, published on August 16, in which the company's president, Eddie Rickenbacker, reveals that now is the time to apply war-fostered technology to "the progress and happiness of America and the world." Mr. Rickenbacker was silent, however, on whether he wants these improvements to spring from the energies and initiative, and at the expense, of individuals; or whether he wants them to be applied coercively by the government, with the expense added to taxation. Nor did he make clear whether he wants the field of improvement open to anybody, or whether he prefers to have certain areas of public service reserved to those already engaged in it, with newcomers strictly excluded. "This is tomorrow" all right, but it remains to be seen whether it is actually a new day of self-sustaining private initiative or a throw-back to a couple of centuries or so ago with political power, rather than individual choice, deciding what things people are to have, and who must pay for them. It is evident enough who lost the war, but it is not yet clear who won it—the followers of Karl Marx or of Adam Smith and Thomas Jefferson.

City of COLUMBUS, MISS. LIGHT & POWER Department

The Okonite Company
Passaic, New Jersey

Gentlemen:

Our urban primary system consists of 3000 volt rubber insulated, cable buried in the ground. For the past four years we have been using your Okonite Rubber Tape for splices, and have found it to be entirely satisfactory without the use of compound filled boxes.

We had a fair stock on hand when the rubber situation became critical and have been fortunate enough to pick up several lots since then, so that we have not suffered. Now, however, we would like to remove a number of underground junctions, which will involve splicing on risers to go up poles, and we find that we have less than 100 pounds of Okonite tape on hand.

If you can still supply the same high quality of Okonite tape as before the war we will go ahead with the work. But if it is less resistant to moisture we will either postpone the work for a while longer or use compound filled boxes.

...ing you for advice, we are,

Yours very truly,

LIGHT AND POWER DEPARTMENT

L. E. Price

L. E. Price
Superintendent

Thanks, Mr. Price —

We at Okonite like to get letters that tell us about good jobs done by our products. Naturally that goes for tapes as well as cables. And — also naturally — we like to get orders. Remain assured that in Okonite and Manson tapes we have consistently refused to use substitutes, and any such tapes you obtain are "the same high quality . . . as before the war."

But we haven't been able to fill all our orders for Okonite and Manson tape because of government restrictions on critical rubber. When Okonite and Manson tapes are again available to all, there will have been no let-down in what they have always offered utilities, railroads, and other industry. Long service life, for example, moisture resistance . . . better splicing . . . toughness and weathering qualities . . . in short, what it takes to give a joint the best insulation and mechanical protection that money can buy.

• When unable to obtain Okonite and Manson tapes, many of our customers are obtaining satisfactory results from our Dundee tapes or our Hazard Division's Panther and Dragon Tapes. The Okonite Company, Passaic, New Jersey.

OKONITE and MANSON TAPES
wherever electrical splices are needed

4131

RAILWAY AGE

Two Programs for Peace-Time Prosperity

As our second war ends, we are confronted with two diametrically opposed programs for re-establishing prosperity and providing employment and economic security in time of peace. Most of the proponents of both programs profess a desire to rely principally on private enterprise. But almost nobody seems willing to let private enterprise function under the same policies of government and business, and to rely on it to the same extent, as before the depression.

The Socialist Proposals

Just before Congress adjourned Senator Barkley reminded his colleagues of a most significant list of bills with which they would be confronted on re-convening. This list included (1) the Murray bill under which the President would annually make up a "budget", consisting of all prospective expenditures of private enterprise and of enough additional government expenditures, to guarantee "full employment," and bills for (2) emergency unemployment benefits; (3) financial aid for small business; (4) expansion of "valley authorities" to increase government-produced power; (5) new highway improvements and construction; (6) broadened coverage under the social security act; (7) medical care for low income groups; (8) "safeguarding" of farm income; (9) urban and rural housing improvement and construction.

Incongruously enough, after listing the foregoing proposals for hugely increased peace-time government spending, Senator Barkley, in the program he outlined, included reductions of individual and corporate income taxes! Senator Taft said last January in discussing the Murray bill: "The post-war budget will be at least $20 billion for expenses we cannot escape. . . . If we add up the additional government spending proposed by the (employment) guaranty theory we reach $40 to $50 billion. Either a tax system must be imposed at even higher rates than the war system now in force, or we must increase the debt somewhere between $15 and $30 billion a year." If all the proposals listed by Senator Barkley were adopted, government expenditures would largely exceed Senator Taft's maximum estimate of $50 billion.

The other and diametrically opposed program for peace-time re-establishment of prosperity and provision of high employment proposes (1) reduction of government expenditures and taxes to not more than $25 billion a year, and (2) affording of full opportunity to private enterprise to produce and distribute all the goods that it can, and to provide all the employment that it can in thus maximizing its production.

There has been no experience in any country to support the claim that in time of peace the program outlined by Senator Barkley would cause the employment and production necessary to increasing the incomes and security and improving the living standards of the masses. There has been experience in every country in which private enterprise really has been tried to support the claim that it has caused, and, if given opportunity, will continue to cause, the needed employment and production. The advocates of the program outlined by Senator Barkley know this. Hence, they try to deceive the people and disarm opposition by saying that their program is "based" on private enterprise and intended only to supplement and "encourage" it. But to carry out their program would require the subjection of private enterprise to more government controls, taxation, subsidized competition and restriction of profits than it has ever stood in any country at any time. Every rational person with any knowledge of what is required to enable private enterprise to function knows that this program would break it down, with resulting collapse of the entire structure that it is ostensibly proposed to "base" on it.

Barkley's Bills Have Popular Plausibility

The program outlined by Senator Barkley must be taken seriously and most of it combatted with energy by believers in political and economic freedom. For most people have forgotten or never knew any of the economic history of the country prior to the depression. They don't know how much and why, with some interruptions, production and employment increased and living standards improved during time of peace for a century and a half before 1930. But they do know how small production and employment were during the depression. They also know how much government regimentation and spending, and also production and employment, have increased during the war. Hence it will be very difficult, indeed, to convince the masses that they should rely for jobs, income and security in future upon free private enterprise rather than upon an economy dominated by government regimentation and spending.

There is vital need of able, consistent and courageous political and business leadership in behalf of policies essential to the restoration of the economic freedom upon which political freedom must be based. There is, unfortunately, a menacing dearth of such leadership.

Will War's Transport Lesson Be Heeded?

With the termination of hostilities in the Pacific, most people's energies will be directed to winding up the war and getting back home and into peace-time production. This job will be properly pursued with relish and enthusiasm—but, it is to be prayerfully hoped, not with such thoroughness as respects transportation as that with which World War I was wound up and forgotten. After World War I the Army was all but abolished, and it shelved its Transportation Corps. Railroad managements learned much from experience in World War I that they utilized with magnificent results in World War II. But, perhaps as a consequence of its having no Transportation Corps, the War Department had absolutely no policy in the inter-war years calculated to assure to the military establishment the transportation facilities it would need in the event of such a crisis as the one now happily ending. That the military did have the necessary transportation facilties at their command when the need arose was a fortunate circumstance for which the heads of the War Department in the inter-war years deserve no credit. They did not "plan it that way." Such planning as the top authorities evidenced was in the direction of destroying what has proved to be an indispensable arm of the service—the railroad industry.

Small Help from Other Agencies

Major General Charles P. Gross, the Army's chief of transportation, recently reviewed the relative contributions of the nation's domestic transportation agencies to the movement of Army materiel and personnel from Pearl Harbor up to the end of June, 1945. He reported that nearly 31 million troops had been transported in organized movements by rail within the United States, and that 731 thousand had been moved by highway carriers, or less than 2½ per cent as many as by rail. Of army freight, General Gross revealed that 278 million tons had been moved by rail and 25 millon tons by highway, or less than 10 per cent as much as by rail. These precentages doubtless overstate the relative contribution of highway carriers, because movements by them unquestionably were for shorter distances than by rail. Inland waterway carriers in the same period moved 4 million tons of military freight—less than 1½ per cent of the movement by rail.

In view of the dependence of the military establishment in its hour of need upon domestic railroad transportation, ordinary foresight in the War Department should have called for some pre-war concern on its part for the physical and financial health of the industry which was destined to prove such an indispensable arm of successful national defense. Actually, however, the War Department did not manifest concern over such easily available facts as the following:

Total investment in the railroad industry *declined* in the 1930-1940 decade by $260,000,000 (compared to an *increase* of $6 billion from 1920 to 1930). Railway expenditures on maintenance of roadway and equipment were $8,897 million less in the ten years ended with 1940 than in the ten years ended with 1930, a decline of almost 44 per cent. Railway routes in service declined by 9,409 miles in the decade ended with 1940, compared with an increase of 7,739 miles in the preceding ten years. Railroad-owned freight cars in service declined 631,000 units, or 27 per cent, from 1930 to 1940; passenger-train cars declined 14,313 units, also 27 per cent; and locomotive units declined 14,861 units, or 26 per cent.

War Department Sided with Railways' Rivals

In the face of this plain deterioration of an industry so closely associated with national defense, a diligent search reveals no instance where the War Department made it officially known that what was occurring aroused any perturbations on its part. In one or two instances, the department was represented at Interstate Commerce Commission hearings to protest the abandonment of unremunerative branch lines, but without constructive suggestions as to how an industry dependent solely upon support from private capital and uncoerced customers could continue to operate services which did not pay their way.

The decline of the railroad industry during the 'Thirties was principally due, of course, to the depression—but it was also due to the unprecedented magnitude of federal expenditures for the development of highways and waterways, for the use of which commensurate payments were not exacted from the direct beneficiaries. And the War Department itself, through its Corps of Engineers, was an active participant during this period in maximizing expenditures on toll-free inland waterways which, it now turns out, have contributed less than 1½ per cent as much military freight service as the railroads have been called upon to produce. Moreover, somebody around the War Department was always ready to impart the prestige of "national defense" to grandiose plans for superhighway construction. As late as 1940, the National Highway Users Conference issued a propaganda pamphlet in which appeared the following significant statements:

"Second only to the waters of the seas, the greatest single element in any scheme for the defense of America must of necessity be based upon our system of highways. Much has been written regarding the German autobahns, but it should be remembered that the German engineers who developed these highways learned most of their lessons from a careful study of the American highway system.

"While it is generally stated that we in America have no military roads as such, the fact remains that our War Department has worked in closest collaboration with the Public Roads Administration, and federal aid highways of today have been carefully marked on War Department maps as being roads of first, second and third military priority. These American roads having potential strategic value make up a system of approximately 75,000 miles. . . .

"The War Department's primary interest is directed toward a system of high standard roads connecting our principal centers of production with vital strategic areas."

The War Department, in short, in the period preceding World War II exercised parental concern for the promotion of transportation agencies of relatively small importance to the national defense, the lavish provision of which at the expense of general taxation was seriously detrimental to the indispensable railroads, while the

railroads decayed before the War Department's eyes without arousing any concern whatever among its top officials. Providentially, the railroads and subordinate officers in the War Department charged with direct dealings with transportation agencies in the inter-war years worked out, with the aid of civilian shippers, a system for maximizing the intensity of utilization of railroad facilities in an emergency—a complex, fruitful and little-recognized development which was described in detail in these pages in our June 10 and 17, 1944, issues. The wisdom and foresight which the War Department lacked at the top were largely provided by railway resourcefulness and the competence of Army officers in subordinate grades who were directly concerned with transportation.

Transport Corps Must Be Retained

The readiness of the War Department for the emergency in other major aspects of its task argues that its neglect to plan for transportation is ascribable to the fact that it had no Transportation Corps in the inter-war years, and, hence, had no responsible officer in its top councils competent to advise it on transportation policy. If our people have learned anything from the bitter and costly experience of this war, they will now temper their enthusiasm for peace-time pursuits to the extent necessary to provide for a continuing military establishment of a magnitude suited to the dangerous world in which we live. If adequate provision is made for peace-time military preparedness, the Army's Transportation Corps will not be abolished. And if the Transportation Corps is continued and its officers are given their rightful place in the top councils of the War Department, there will be no excuse for such government indifference or active unfriendliness as allowed the railroads to undergo such a disastrous experience as they did in the 'Thirties.

After a repetition of such experience it is most unlikely that the railroads would be found able to achieve as much for another great war effort as they have achieved for that now ending. And experience surely has demonstrated that if the railroads should fail in modern warfare, with its primary reliance on vast industrial production, the entire war effort would fail.

Conversion Program Outlined for the W. P. B.

Among the most interesting developments in production and supply during the last few days of the Japanese war was the action of President Truman on August 9, calling for the removal of war-time production controls as soon as possible and consistent with an orderly transition from war to peace. Mr. Truman's letter to Chairman Krug of the W. P. B. outlined a five point program designed to channel materials into needed civilian goods and to ease as many shocks as possible. At the same time the letter left open to question the settlement of the recent sharp dispute between the W. P. B. and the O. P. A. with regard to the removal of war-time restrictions.

The President's program includes (1) Appropriate action to expand production of materials in short supply; (2) limitations upon the manufacture of products requiring scarce materials; (3) broad and effective controls of inventories to avoid speculative hoarding which would "endanger our stabilization program"; (4) establishment of priority assistance to break bottlenecks which might impede reconversion; and (5) allocation of scarce materials for lower-priced consumer goods essential to the stabilization program.

Mr. Truman declared, "Every opportunity must be given to private business to exercise its ingenuity and forcefulness in speeding resumption of civilian production, subject to war needs." Although the President's program was announced before Japan's bid for peace, it is apparent that Mr. Truman well realizes how much more business will chafe under rigid regulations now that the war is over, for he added that, to achieve unprecedented civilian production it will be necessary that W. P. B. continue for the present some of the measures it adopted to achieve unprecedented war production. The President said that controls should be lifted, "as soon as they are no longer needed, but that

Those Pillows Won't Help Our Man Much

there must be continued allocation of scarce materials when essential to the stabilization program".

Just what effect the new plan will have upon the manufacture and supply of railway equipment, materials and supplies, in view of the sudden cessation of hostilities, remains to be seen. Speculation indicates that the railways may well expect deliveries of practically all essential items within a reasonable time. For instance, allocations to the O. D. T. under the C. M. P. plan for the fourth quarter of 1945, as announced by the W. P. B. on August 11, provide the greater part of all carbon steel requirements. Total allocations for transportation equipment amounted to 89 per cent of the stated requirements, and all O. D. T. material programs for the fourth quarter were met by W. P. B. allotments for new replacement rail and track accessories and property-carrying highway transport equipment. The agency allocated 86 per cent of the stated requirements for control-cooled rail and for track fastenings. All requirements for railway rolling stock were met in full, and comprised 41,500 tons for locomotives, 240,000 tons for freight cars, 606,100 tons for passenger train cars and 3,000 tons for railway marine equipment. Since the first quarterly allocation was made during the second quarter of 1943, more than 17,000,000 tons of steel have been alloted to the O. D. T. for domestic transportation equipment and supplies, or approximately 81 per cent of the total 21,000,000 tons requested—the largest of any non-military agency.

Mixing Prime Movers

In a communication elsewhere in this issue the writer concludes that "The greatest practical advantage of the Diesel engine lies in the fact that it . . . has the ability to develop a tremendous starting and low-speed tractive force," and proposes the development of a turbine-electric system to supplement the power from the cylinders of a conventional steam locomotive through the low-speed range within which the cylinders do not utilize the full steam-making capacity of the boiler.

Many patents have been issued dealing with the adaptation of the steam-turbine-electric system as an auxiliary power generator for the reciprocating steam locomotive. Most of them were granted during and immediately following the first World War. The schemes patented usually cover a turbo-electric power plant driving electric motors on engine-truck and tender wheels and are intended to operate at low pressure on exhaust steam from the locomotive cylinders, discharging into water-cooled condensers. Steam drawn directly from the boiler at times when the locomotive is not furnishing sufficient exhaust steam supplements the latter. None of these schemes faced realistically the problem of drafting the locomotive and securing sufficient heat-transfer surface to make them feasible. Their significance is that they were intended to supplement the power of the steam cylinder throughout the range of operating speeds rather than at starting and slow speeds alone.

The steam turbine as a locomotive prime mover is very much in evidence in America. It is now on trial in its geared-to-the-rail form and soon again will be in its turbo-electric form, which will provide essentially the same constant-horsepower locomotive characteristic which distinguishes the Diesel-electric locomotive from the conventional steam locomotive. It is this characteristic which provides high-starting and low-speed tractive force. This has proved itself extremely useful in switching service. It is somewhat less valuable in road service. It is doubtful, therefore, whether the extra starting and low-speed tractive force would justify the addition of an auxiliary steam-turbine-electric power plant to the steam road locomotive. Such a plant would have electric motors geared to idling axles, but its full capacity could be utilized only at starting and the output would be reduced to zero at some speed around 25 or 30 miles an hour. One of the economic advantages of the steam locomotive is its low first cost. The addition of a turbo-electric power plant, such as that suggested by our correspondent, would probably go a long way toward completely eliminating that advantage, in comparison with the Diesel-electric locomotive or even with full-turbine locomotives.

America's "Break with the Past"

The Authority Bills [i. e., the proposals to establish other institutions like T. V. A. in nine additional regions], by specific grants and delegation of authority, in language susceptible to broad interpretation, empower the Authority to carry on activities in matters which are not public in their nature, to participate in social and cultural affairs and to assume powers which were never surrendered by the states to the federal government. The exercise of these powers by the Authority would destroy the sovereignty of the states in matters vital to the preservation of our form of government. . . .

These encroaching controls by the central government would make effective a program of planned economy and a gradual change in the American system to an experiment in state socialism. . . .

Some consider Authorities as the only means of basin-wide, coordinated development. . . . Others advocate them because they will build great public works, affording employment and a boon to social progress. . . .

These glittering word pictures, however, are painted with a false background. They reflect only immediate, temporary benefits from rapid building of projects and vast expenditures of public funds during the construction period. They do not reflect the ability of the country to finance such a program, nor the capacity of the projects to repay in kind, nor the incursion of government into private ventures. Moreover, it is not economically sound to add to our facilities at a rate beyond the capacity of our people to absorb. T.V.A.—small, indeed, compared to M.V.A. or C.V.A.—spent nearly $800,000,000.00 in twelve years, and needs another $200,000,000.00 of federal funds to complete its project—a government venture still in an experimental stage, the benefits of which to the nation have not yet been proven. About 52 percent of the expenditure was for power, in an area not more than one-tenth of the size of a combined M.V.A. and C.V.A. It has returned nothing to the federal treasury. . . .

David E. Lilienthal, chairman of the T. V. A., in his recent book on the subject, says: "Congress, in creating T. V. A., broke with the past."

—From "The Authority Issue," a booklet issued by 31 land and water organizations, which are opposing the creation of more "authorities" such as T. V. A.

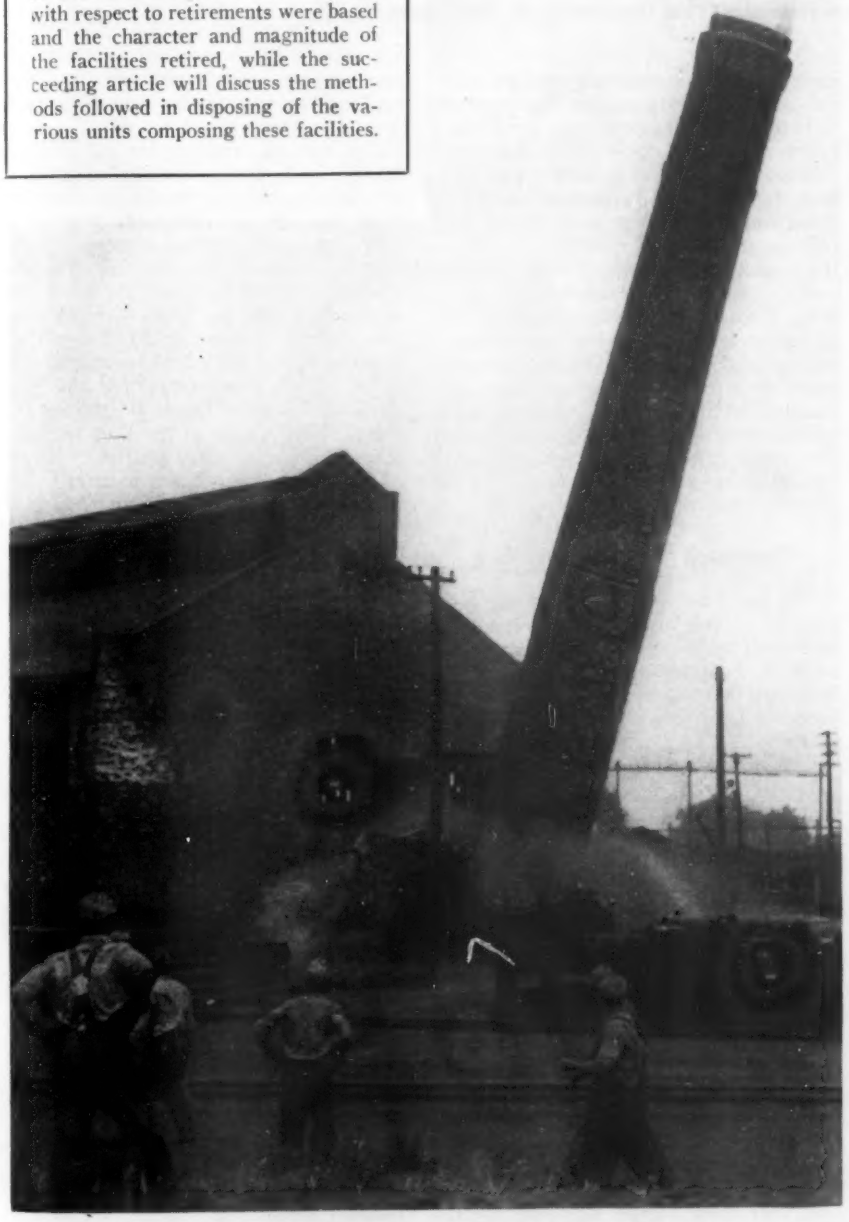
Retires Many Obsolete Property Units

During the last six years the Chicago & North Western has retired 6,626 units of fixed property, 391 locomotives, 9,405 cars of all classes and a long list of shop tools

Part 1

This is the first of two articles describing the methods that have been followed by the Chicago & North Western during the last six years in a well-organized campaign to rid the property of unused and obsolete facilities and of others that were not being used to advantage. This article tells of the factors upon which decisions with respect to retirements were based and the character and magnitude of the facilities retired, while the succeeding article will discuss the methods followed in disposing of the various units composing these facilities.

DURING the past six years the Chicago & North Western has carried on a series of surveys to ferret out facilities and equipment that have become obsolete, that have fallen into disuse, or that are not being used to advantage. As a result of these investigations, which are still continuing, a surprisingly large number and variety of units of the fixed property, of locomotives and cars and of shop machines and tools have been retired and not replaced, or have been shifted to more productive use. That this campaign is no flash in the pan is attested by the fact that it is well organized, thoroughly supervised and is being carried out consistently and systematically year by year on all divisions and by all departments of the system.



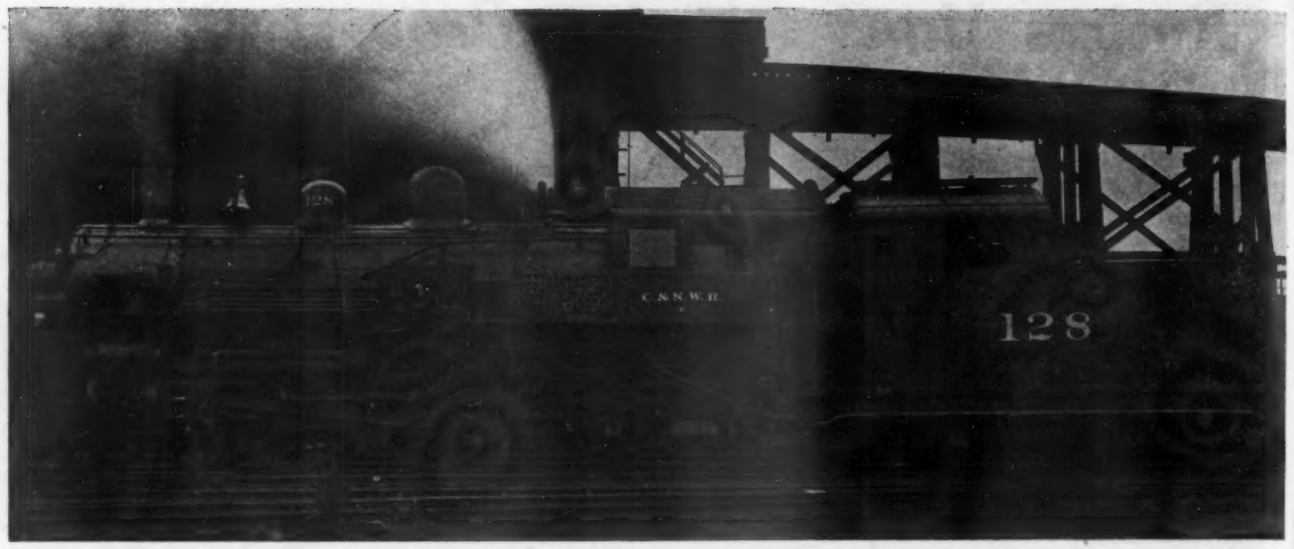
Dropping the Smokestack for the Powerhouse at the Boone (Iowa) Shops Which Were Among the Abandoned Facilities

The facilities so far retired have ranged from unproductive branch lines, unnecessary sidings, yard tracks, second tracks, signals and signal bridges, to combination passenger and freight stations, freight stations, enginehouses, shop buildings and fuel and water stations. In addition, a wide variety of miscellaneous and minor structures have come under scrutiny and have been retired, including many miles of right-of-way fence. Again, machine tools and other shop equipment, which are retained on most roads long after they have become unprofitable because of low efficiency compared with modern designs, have not escaped scrutiny and many of them have disappeared in the general process of clearing the road of useless and unnecessary appendages, regardless of type and kind.

These surveys have been particularly intensive as well as extensive in the case of shop machinery and tools. As a consequence, hundreds of these units have been retired. In not a few cases, however, these coordinated surveys showed that owing to changes in requirements at certain shops, some usable tools were idle at these shops, although there was a current need for similar tools at other shops. Where this condition existed, the tools were transferred promptly. The decisions with respect to this class of equipment were governed primarily by what were shown to be the actual requirements at the several shops and terminals. At the same time a plan for concentrating the heavier and more important machines and tools at the principal shops were instituted, and this has been followed as consistently as conditions have permitted.

Capacity Not Reduced

Locomotives and cars have been examined with the same patient thoroughness and, despite the present urgent need for both cars and locomotives, many of these units have been retired, and more



Forty-Two Locomotives of This Obsolete Type Have Been Scrapped

are being listed for future retirement. Both the transportation and mechanical officers of the road declare, however, that these retirements have not reduced the capacity of the road to handle freight or passengers, but that in some respects this capacity has been increased because of the retirements. In part, the reason for this can be grasped readily when it is known that the age of the locomotives retired under the present plan ranged from 26 years up to 58 years. In other words, the oldest locomotives that were retired were acquired in 1885. Obviously, the older locomotives had been obsolete for many years. Because of their light weight, however, they had been retained for use on certain unimportant branch lines where heavier locomotives could not be used to advantage. With the abandonment of these lines their usefulness ceased and they too were retired. Another important reason for this seeming paradox of increased capacity despite these retirements will be mentioned in the discussion of the methods that were followed in disposing of the various units that were slated for retirement.

The idea of clearing the property of all unnecessary facilities, which was developed subsequently into consistent plan, had its genesis in 1939, while R. L. Williams, then chief executive officer under the trustees, and now president, was looking over certain facilities, and noticed some tracks that looked as if they were not in use. Inquiry developed the information that these tracks had not been used for several years and were not then needed. It occurred to Mr. Williams that there might be other facilities in the same category, and he suggested that the road be canvassed to determine the number and character of unneeded structures, tracks and equipment on the road.

Committees were appointed on each division for the purpose of studying all surplus and obsolete facilities. These committees consisted of a representative each from the engineering, the mechanical and the transportation departments. Where traffic interests were involved, a representative of the traffic department also served on the committee. The original reports and recommendations of these committees were used by the staff officers as a basis for further investigations on their subsequent visits to each and every community served by the railway. Reports and recommendations continued to be made for the retirement of surplus and obsolete facilities and equipment as is evidenced by the very substantial retirements and abandonments which occurred in 1944, approximately five years after the original station to station surveys were inaugurated by the division committees.

Response Was Surprising

The response was so surprising with respect to the number and variety of units that were recommended for retirement that caution was indicated, and a thorough investigation was made of each proposal to insure that no probable future need for any of the units was overlooked. Despite this response, however, it was believed that other possibilities remained, and during the following year a similar survey was carried out, with the result that still more unneeded units were discovered and retired, and this procedure has been repeated in each succeeding year since then. All of these proposals, together with briefs setting forth the reasons for recommending the retirement and the methods suggested for disposal, have been presented to the management for approval before the retirement has been undertaken.

It might have been expected that after the second year few, if any, units suitable for retirement would have remained for consideration, yet, the third year was the most productive, and even in the fifth year there seemed to be no significant diminution in the number of proposals for retirement, although the average importance of the structures then and now coming up for consideration is somewhat less, based on either size or value, than the average for the first two years. In fact, the number of units of the fixed property retired in 1943, the fifth year of the program, aggregated 683, compared with an average of 879 units each year for the full five-year period. In 1944, however, the sixth year of the program, the units of fixed property retired dropped to 30, the smallest number for the period, although the total value of the property retired this year amounted to $1,425,620. In making this comparison, a mile of track or of fence, a fuel station, a water station or an enginehouse stall was taken as a unit. The remainder was made up of individual buildings, signals, etc. This includes only units of fixed property, no locomotives, cars or shop machinery being included in the foregoing figures, which total 6,626 units for the six-year period.

In making the surveys under this program, only those units that should be retired and not replaced have been given consideration. Furthermore, not all of the units studied had fallen into disuse, for many of the buildings that have been retired were occupied and in daily use when they came up for consideration. Sometimes duplicate operations were being performed in adjacent shops; in some cases both the car and locomotive departments were operating separate air compressors, either one of which was capable of providing all of the air required. In others, the occupancy of buildings was on the basis of convenience rather than need.

While the surveys have been and are still well supervised, in the main the initiative for the retirement proposals is now left to the division or departmental officers, so that there is no dispute about the desirability of the recommended action.

In making the studies preliminary to retiring any unit of property, the first

and most important question to be given consideration is whether the unit or facility is needed currently. Other factors included in the studies are obsolescence, physical condition, cost of maintenance, probable future need for the unit, the amount of salvage that can be recovered, whether the unit can be used to advantage elsewhere on the system, and the probable effect of the retirement on property taxes.

A general statement of the types of structures and facilities does not give a clear-cut conception of the extent to which the program has been carried. For example, in addition to the 238 combination and other stations that have been retired, as shown in the accompanying table, other station buildings, such as coal and oil houses, outside toilets, yardmasters' offices, stockyards, platforms and numerous minor buildings in considerable variety, to the number of 721, or a grand total of 959 units, had been retired up to the close of 1944, representing, together with the stations, an investment of approximately $1,800,000.

Likewise, the general term shop includes such diverse structures as boiler shops, locomotive-erecting shops, machine shops, blacksmith shops, tank shops, car shops, paint shops, power plants and numerous incidental buildings, together with their appurtenances. The enginehouses listed as retired also included the turntable and cinder pits, except when only a part of a structure was torn down. Because there was a considerable range in the sizes (number of stalls) of the enginehouses retired and because some of these structures were only reduced in size, the engine stall was selected as the unit for measuring the magnitude of the retirements of these structures. Up to the end of 1944, a total of 377 enginehouse stalls, including turntables and cinder pits, had been retired and torn down.

In general, the same influences that have operated to make enginehouses obsolete or unnecessary have had the same effect on water and fuel stations. As locomotives grew in size and efficiency, it was found possible to extend their runs until, at present, trains are being operated over as many as five to eight former engine districts without a change of locomotives. Obviously, this practice has eliminated the necessity for maintaining numerous engine terminals, including the enginehouses, cinder pits, coaling and water facilities and, in some cases, shop buildings and power plants. In addition, larger locomotive tenders have obviated the necessity for taking water at the short intervals that were formerly required, so that not a few water stations have been rendered unnecessary and have fallen into disuse from these causes.

90 Water Stations Retired

On the Chicago & North Western, as a result of these influences, the abandonment of branch lines and a variety of local factors, 90 water stations were retired during the six-year period ending with 1944, of which 3 were retired during 1944. Likewise, 45 fuel stations were also rendered unnecessary by these and other factors. In cataloging the facilities thus retired, each plant was considered as a unit, no separate listing being made of the machinery required to operate the fuel stations, or of the power units, pumps, tanks and other items that combine to make up a water station.

A few typical examples may give a clearer idea of the magnitude and variety of the property units involved in the North Western's program. At the Chicago shops of this company a comparatively large freight house, used primarily for the receipt and shipment of company material, was retired in 1941. During the same year, at this shop, 9,571 lin. ft. of yard tracks, a fuel station, an enginehouse and turntable, a gantry crane and other incidental facilities which, together with the freight house, represented an investment of more than $400,000, were retired without detriment to shop or yard operations.

Removing the Track on the Abandoned Line Between Linwood, Neb., and Hastings

Units of Property Retired by the Chicago & North Western
1939-1944, Inclusive

Type of facility—	Retired 1944	Total to Dec. 31, 1944
Unproductive branch lines—miles	28.55	383.59
Unnecessary side tracks—miles	47.54	647.54
Automatic block signals	4	183 *
All other signals	18	451 *
Signal bridges	..	96 *
Depots, freight and passenger	13	238
Other station buildings	34	721
Enginehouses—stalls	..	377
Shop buildings	13	650
Fuel and water stations	6	135
Tobacco warehouse	..	1
Right-of-way fences—miles	2	1,450
Miscellaneous minor structures	64	1,293
Total units	230.09	6,626.13
Type of Equipment		
Locomotives	47	391
Freight-train cars	615	8,399
Passenger-train cars	4	115
Work Cars	54	891
Total units of equipment	720	9,824

* These retirements were made primarily in connection with the respacing of signals for shortened train schedules.

At Upton, Ill., a junction point with the Elgin, Joliet & Eastern, where a small switching yard that had been maintained for many years had fallen into disuse, 17,518 ft., or 3.32 miles, of yard tracks were taken up and a cinder pit was dismantled and filled, this work having been done in 1940 during the second year of the program. In like manner, during the following year, 51,428 ft., or approximately 10 miles, of tracks were removed from a yard at East Clinton, Ill., which had substantially been abandoned for some time, A more extensive project in the general program involved the retirement at Belvidere, Ill., of yard and engine-terminal facilities consisting of 58,100 ft., or 11 miles of yard and second tracks, a water station, an enginehouse, a turntable, a cinder pit and the stockyards, all of which had also fallen into disuse. The yard and terminal facilities at this point had not been in use for several years and the retirements represented a cleaning up of all facilities not in current use.

At one time, Boone, Iowa, was an important shop point on the North Western, but as heavy repairs on locomotives and cars were gradually concentrated at more strategic points on the line, the importance of the facilities at Boone declined until the amount of work being done there was so small that it became uneconomical to maintain the shop. Accordingly, authority to abandon the plant was obtained in 1942, and a number of the buildings and a large amount of the machinery were removed that year. This was the second largest abandonment of facilities of this type that has occurred in connection with the retirement program, although a similar plant at Missouri Valley, Iowa, was only slightly behind on the basis of either size, number of buildings or the investment represented.

Missouri Valley is a junction for three lines, the Chicago-Omaha line, a line extending to Minneapolis and St. Paul, Minn., a line to Lander, Wyo., the latter originally the Fremont, Elkhorn & Missouri Valley. It was logical, therefore, that a shop should be located at Missouri Valley, primarily to serve the lines to the north and west. However, this plant declined in the same way and for the same reasons as the one at Boone, and it was retired also in 1942, including 8,947 ft. of track, a boiler shop, an erecting shop, a machine shop, a blacksmith shop, a tank shop, a car shop, a power plant, a number of enginehouse stalls and a turntable, including their equipment and appurtenances, and numerous incidental buildings.

Many Branch Lines in Program

Another item of large importance in the program of eliminating unneeded and unproductive property has been the abandonment of a considerable mileage of branch lines that had become unprofitable. Among these lines, which aggregated 384 miles in length, were the lines from Bain, Wis., to Bassetts; Hebron, Ill., to Harvard; Carroll, Iowa, to Harlan; Mercer, Wis., to Winegar; Watersmeet, Mich., to Choate; Sycamore, Ill., to Caledonia; Wine, Mich., to Ladoga; Linwood, Neb., to Hastings, which represented the largest abandonment of a single line; and Illco, Wyo., to Shoshoni. In the last mentioned case, however, the decision to abandon the line was based on economies resulting from a consolidation with another railroad.

Primarily, the reason for the Wyoming abandonment was that the Burlington and North Western were maintaining parallel and competing lines which passed through a section that originated only a small amount of traffic, so that both lines were unprofitable, although there were definite reasons why each road desired to maintain its service. In this situation an agreement was reached whereby the North Western constructed a short connection to reach the Burlington tracks, which were located more favorably and could be operated to better advantage, and, having begun operation, the Burlington's line abandoned its own 86 miles of line.

Other Trackage Taken Up

In addition to the 384 miles of branch lines abandoned, five small sections of second track were found, ranging from 0.7 miles to 14.3 miles, which, because of changes in traffic requirements, were no longer needed. These aggregated more than 21 miles. Passing sidings, crossovers, and other running tracks totaling 215 miles also came under scrutiny and have been retired during the six-year period, the largest mileage for any one year being approximately 56 miles. Yards, including the tracks at engine terminals and shops, which have already been mentioned, yielded a total of 197 miles, the largest aggregate abandonment of this class of tracks for any one year, 75 miles, having occurred in 1942, the fourth year of the campaign, while the maximum mileage of passing sidings abandoned occurred in 1940, the second year of the campaign. Other switching tracks, mainly out on the line, aggregating 215 miles, were also abandoned, 1940 and 1942 being the years of largest mileage in this category, with slightly more than 71 miles for each year. All told, a total of 648 miles of sidings had been abandoned by the end of 1944.

By the time the operating, the mechanical and the engineering departments were well started on their surveys of the fixed property, the mechanical department was also planning the retirement of a large number of locomotives, cars and shop machines and tools. In this case, obsolescence, operating requirements and the cost of maintenance were the principal factors affecting the decision to retire the various units of equipment selected for study. However, carrying capacity was also a factor in the case of cars and tractive effort in the case of locomotives.

Locomotives Were Obsolete

Some of the older locomotives were small and, because their axle loads were light, they had been relegated to unimportant branch-line service. But even here their low tractive effort made them undesirable, and it was considered an excellent idea to get rid of them when the opporunity was presented. As a result 197 of these locomotives were retired in 1939 and 1940. While subsequent retirements have generally been of larger locomotives, the same considerations still govern the decisions which had brought the total retirements to 391 by the end of 1944. It should not be assumed from the foregoing that the program on the North Western has been carried too far, for the road still has 1,130 steam locomotives in active operation and, as mentioned previously, instead of being crippled, its operations have been improved.

Relatively few cars were retired in 1939, the total being only 25, of which 5 were maintenance of way work cars. During 1940, however, a total of 3,804 cars of all classes were retired, the greatest number for any year since the program was initiated. This included 67 passenger cars, 3,322 freight cars and 415 work cars, of which 1 was a pile driver, 1 a steam shovel and 242 were boarding cars for mobile laborers' camps. or the six-year period, a total of 9,405 cars of all classes have been retired, including 115 passenger-train cars, 8,399 revenue freight cars and 891 work cars. Of the work cars, 7 were bridge-derrick cars, 6 were pile drivers, 3 were steam shovels and 462 were boarding cars.

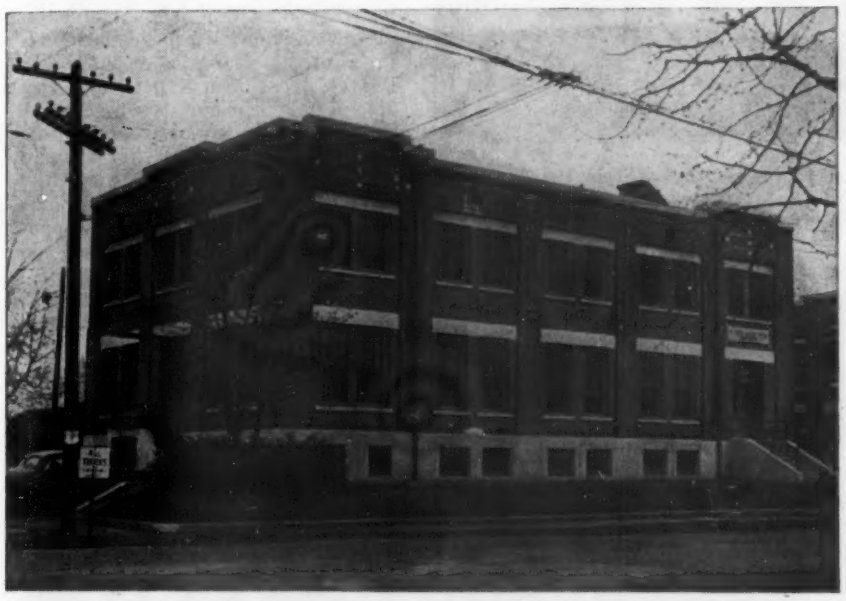
It is of interest to note that the total trackage abandoned during the six-year period amounts to slightly less than 8 per cent, or about 1/13, of the total trackage of the system, while 23 per cent of the total number of locomotives owned have been retired. The table gives the number of units of fixed property and of equipment that were retired in 1944 and the total for the six years the program has been under way. A later article will describe the manner in which the retirements were effected.

Mr. Williams not only took a keen interest in these surveys and has maintained this interest throughout, but participated actively in many of the earlier ones. However, as the reorganization of the road progressed, his duties became too exacting to permit his personal participation in the surveys, and L. L. White, vice-president in charge of operation, took over the direction of the program and has given it his hearty support. Under his direction the campaign is still being carried on with the prospect that it will continue indefinitely, since the changing demands of traffic and operation will continue to make some facilities obsolete and others unnecessary.

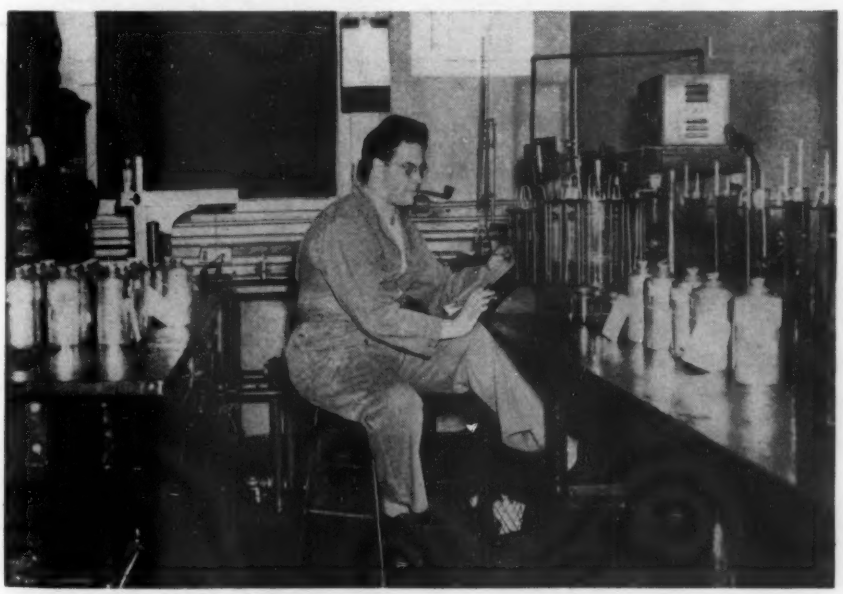
Fifty Years of Testing Service

The Southern's test department controls the quality of the materials purchased, investigates possibilities of new application and studies general product serviceability

By CHARLES B. BRYANT
Assistant to Vice-President
(Research and Tests)
Southern Railway



General View of the Southern's Laboratory at Alexandria, Va.



Part of the Southern's Oil Laboratory. Viscosity Measurements on Twelve Samples Can Be Made at One Time with the Ubbelohde Equipment Shown

THE test department of the Southern will begin its second half century of existence in a few weeks. On October 14, 1895, the second vice-president of the railroad issued a circular, which in part included the following:

"The superintendent of tests will provide specifications for and have charge of inspection of all supplies and will arrange for such mechanical and chemical tests as may be necessary to insure the fitness of material for service. He will conduct all investigations of and experiments with new devices and applications referred to him for this purpose by heads of departments, including such tests as are made in the laboratory as well as in actual service on the road. He will investigate failures. He will carry out any scientific investigation assigned him."

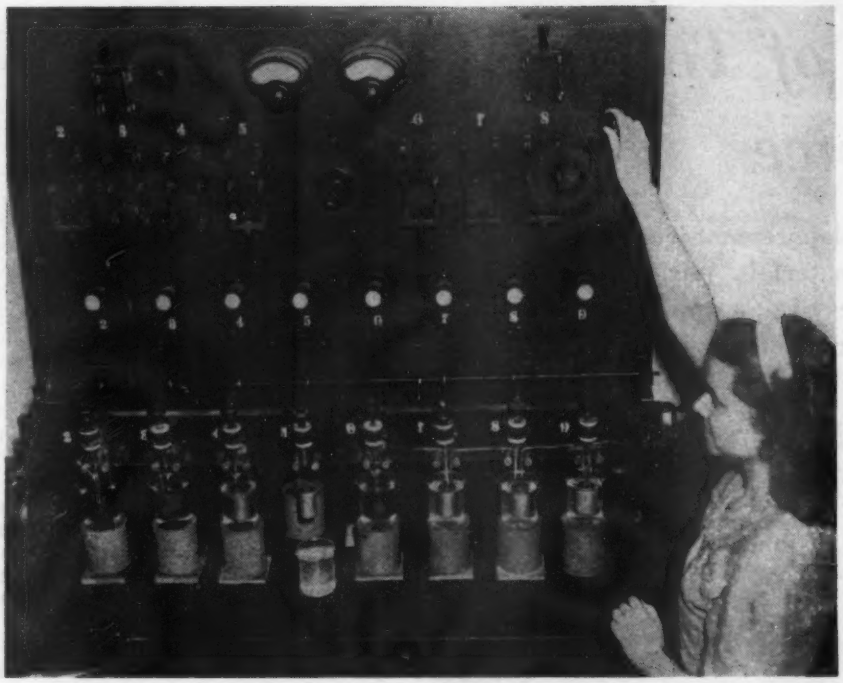
In the light of subsequent experience, it is amazing how accurate a forecast of the usefulness of such a department was made, because the circular still comprises an excellent description of the activities of the department.

From its small beginning 50 years ago, the department gradually has increased in size and in scope and now includes approximately 40 employees, mostly technical specialists, and is fortunate in having an excellent materials laboratory. The work of the test department primarily is tied in with materials, and, since materials are the life blood on which the operation of a railroad system depends, its activities reach into virtually every branch of the entire operation.

Modern Laboratory Equipment

The laboratory facilities serve as the core of the organization. The laboratory building, located at Alexandria, Va., approximately eight miles from the executive headquarters of the railroad in Washington, D. C., is a reinforced concrete and brick structure built for this purpose. It comprises a basement and two upper floors. The basement and first floor are devoted exclusively to physical testing operations, and the second floor is used as a chemical laboratory. All of the usual laboratory servicing facilities, including electric power, water, gas, compressed air, and vacuum, are available at all needed points, and ample fume exhausting hoods are provided in the chemical laboratory.

The physical laboratory includes a small shop for the preparation of test specimens and the manufacture of specialized testing devices. A 300,000-lb. triple-range Baldwin-Southwick universal testing machine was installed in November, 1940, and much of the physical testing centers around that machine. Brinnell and Rockwell hardness testers, metallographic microscope, abrasion testing equipment, accelerated weathering machine, photometer, Los Angeles ballast testing machine, and accessory equipment, provide the nucleus of the operation of the physical laboratory. At present, the laboratory has on temporary installation two rolling-load rail testing machines, similar to those used in the



Electrolytic Analysis Apparatus Used by the Southern's Test Department. Here the Constituents of Alloys Are Plated Out of Solution on Platinum Electrodes and Determined by Direct Weighing

rail investigation at the University of Illinois, which are being used in a research project in connection with the welding of engine burns in rail.

The chemical laboratory is well equipped for the variety required by the wide scope of its work. Six electric ovens are used and are maintained at various temperatures to avoid the loss of time incident to frequent adjustments. Batteries of Ubbelohde viscosity tubes are operated in constant temperature baths in the testing of oils. Oxygen bomb equipment of the latest type is used in fuel testing and a modern electrical resistance furnace with controlled atmosphere is available for high temperature measurements of ash fusion. Electrolytic methods are used in the analysis of many alloys and a multiple position panel board, powered by a copper oxide rectifier, allows the simultaneous operation of eight determinations. A paint spray booth with exhaust fan permits the proper preparation of exposure panels under conditions paralleling actual paint shop operation.

The work has increased greatly in recent years as the improvements in equipment have enabled the laboratory to be of greater use to the railroad. In 1936 a total of 2,448 samples were tested in the laboratory; in 1944 over 7,000 samples were tested. When it is considered that the testing of each sample often involves from five to ten or more separate determinations, the volume of laboratory testing assumes impressive magnitude .

The laboratory facilities are used to a considerable extent in checking the operations of other departments of the railroad. For instance, all concrete work is tested by standard 6-in. by 12-in. cylinders. Qualification tests for welders employed in bridge repair work are made in the laboratory, control tests on cast iron locomotive cylinders manufactured in one of the mechanical shops are made, and continual testing is conducted on the products of the Lenoir Car Works, a Southern Railway subsidiary, which manufactures most of the railroad's requirements of steel castings, chilled iron car wheels, car journal bearings, and bronze castings of all types.

The laboratory also provides control testing for the reclaiming of journal box packing waste and car oil, and for the reclaiming of Diesel engine lubricating oil. All specimens of rail service failures of certain types are sent to the laboratory for confirming examination in order that statistical reports to the American Railway Engineering Association as to transverse fissure and other failures shall be accurate.

A regular routine of determining the condition of lubricating oil in Diesel locomotive engines has been adopted, under which procedure the oil in each engine is sampled and tested at frequent intervals. Through this testing, defective lubricating conditions are discovered and the necessary corrective measures are taken before damage to the expensive Diesel engines occurs. Close contact with Diesel engine maintenance forces by wire when necessary is maintained in connection with this testing.

Activities in carrying out the original instruction, namely, determining the "fitness of material for service" will always comprise a large part of the work of the test department. In this connection, effective cooperation is maintained with all of the material using departments of the railroad. It is the responsibility of the test department to determine acceptable brands of materials where purchasing is on a brand basis or to prepare suitable specifications for materials where such are desirable.

The Southern always has preferred, where possible, to describe its material requirements by specifications, and it now uses about 100 specifications for those materials purchased in greatest volume. In preparing specifications, an effort is made to use, if possible, a recognized standard, such as American Society for Testing Materials, Association of American Railroads, Federal Standard Stock Catalogue, or other well known standards. Where applicable, this is advantageous, both for producer and consumer.

Many of the purchasing specifications are modifications of well known standards. For some years before the war, for instance, the Southern purchased firebox steel on a specification almost identical with that of the A. A. R. but differing in that it provided for more

Outdoor Exposure Racks for Determining Durability of Paint and Other Protective Coatings Cover the Roof of the Southern's Laboratory Building

extensive testing than the standard specification. In many cases no standard exists and, in this event, an individual specification is prepared. Paints, lubricants, Diesel fuel, and waste, are covered by such individual railroad specifications. The selection, adaptation, or the preparation, as the case may be, of the purchase specification must be conducted in cooperation with the using department, as well as with an adequate acquaintance with commercial possibilities. This requires the specification writer to be in close touch with the users of the material in question, together with the manufacturing industry.

Inspection of Purchases

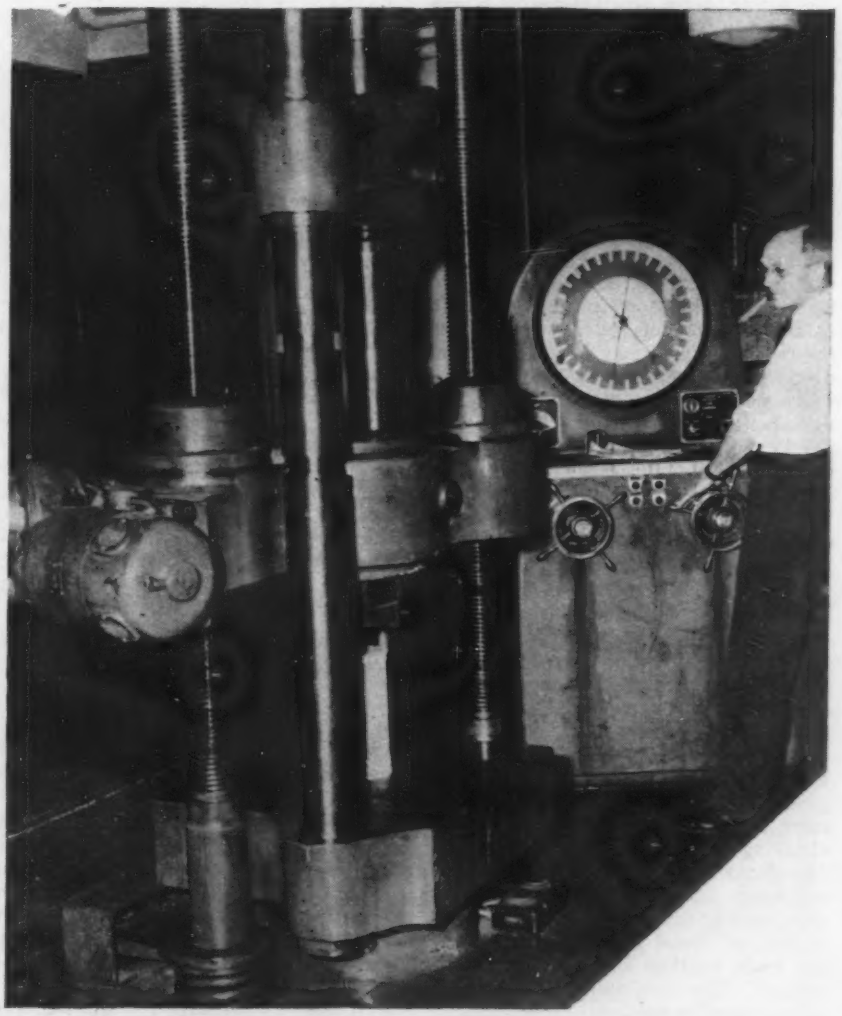
Having adopted a specification, the Southern method of putting it into operation is simple and effective. Each day the purchasing department furnishes the test department with copies of all purchase orders covering materials subject to specification and inspection. The test department, upon receipt of these copies, determines the inspection procedure to be followed.

In the case of many classes of material, such as rail, wheels, axles, structural steel, boiler material, steel castings, and other heavy items, the inspection is conducted in the manufacturing plant. Testing equipment of the producer is used by the railroad inspectors under these circumstances, and thus on-the-spot decision as to acceptability can be made. To handle this phase of the work promptly, the test department maintains a staff of resident inspectors at various material producing centers, including: Philadelphia, Pa., Pittsburgh, Pa., Chicago, Ill., Birmingham, Ala., Charlotte, N. C., Lenoir City, Tenn., and Alexandria, Va., the headquarters. The material inspectors in these various territories are provided with railroad transportation and generally cover the inspection of all materials produced within their respective districts. Under unusual conditions, where an inspection demands a group rather than a single man, such as in the inspection of rail where five men frequently are required, the engineer of tests arranges for the necessary concentration of forces.

For materials which can be inspected most advantageously by testing in the laboratory, the engineer of tests, upon receipt of the purchase order, arranges with the storekeeper who will receive the shipment to submit a sample to the laboratory promptly upon delivery. Materials inspected in this way include fuels, lubricants, most paints, roofing materials, and other products which can be represented satisfactorily for inspection purposes by small samples. The field inspectors also submit samples in the form of drillings of practically all metal products which they inspect and these are checked for chemical analysis by the laboratory.

Upon the completion of inspection, whether in the field or in the laboratory, reports of the acceptance are made to the purchasing and material and supply

The Southern's Research on the Welding of Rails Damaged by Slipping Drivers Is Conducted on These Rolling Load Machines Under Test Loads of 50,000 and 60,000 Lb.



Testing a 6 by 12 In. Concrete Cy... Southern's 300,000 Lb. Universal ...

departments so that they may be advised that the materials in question are acceptable for use and that the vouchers may be paid. In the case of rejected materials, the matter is handled immediately and directly with the producer.

With the large number of samples handled by the laboratory, the paper work incident to keeping the other departments of the railroad properly informed is considerable. Every effort is made to simplify reports and printed forms are used in reporting wherever possible. As an example of the simplification of office work that can be accomplished, the following illustration is cited:

Formerly, in requesting a sample, for instance, of paint, the engineer of tests would write the storekeeper in question describing the material to be shipped and asking that a sample be submitted to the laboratory upon arrival. When the storekeeper submitted the sample, he had to describe it completely for identification purposes. Upon receipt at the laboratory, the sample required the preparation of work sheet identification, and, upon the completion of the test, a letter was written to the storekeeper advising him of the result. This involved repeated typing in various offices of the same descriptive information.

A printed form, reproduction of which is shown in Figure 1, has been prepared which eliminates all but one typing of this information. When the paper work so eliminated is multiplied by the thousands of times per year that this procedure is used, the saving is considerable.

Form TD-4

SOUTHERN RAILWAY SYSTEM

OFFICE OF ENGINEER OF TESTS

REQUEST FOR SAMPLE

Request No._____ Alexandria, Va._____

Material _____ Spec No._____

Order No._____ Requisition No._____

Manufacturer_____

Quantity_____

Requested from_____

Quantity desired for test_____ Tank Car No._____

Type of container sent for sample_____

Date forwarded to Lab._____ Received in Lab._____ Reported_____

This is to request that you forward to me for test purposes the sample described above. Duplicate copy of this form, attached herewith, is to be filled out with information requested and sent me at time sample is forwarded. Please observe instructions given below:

Please see that samples are tagged and marked clearly with request number shown above so that they may be identified. Samples should be submitted in containers forwarded to you for that purpose. Please use every care to see that samples are truly representative of the material and, for those items listed below, observe the appropriate requirement:

OIL, GASOLINE, LONG TIME BURNING OIL, ETC.—Take sample from dome of tank car or other original container.

PAINT—Stir paint in original container thoroughly before taking sample.

OIL SOAP—Obtain sample at least 6 inches away from top and sides of original container.

R. H. Beverley

Engineer of Tests

ORIGINAL—For file of office submitting sample.

Printed Form Which Serves as Request for Sample with Specific Instructions as to Procedure and in Its Triplicate and Quadruplicate (by the Elimination of the Printing Below the Double Ruled Line and the Substitution of Appropriate Phrases) Also Serves as a Notice of Laboratory Receipt and Finally as a Report of Results

New Material Developments

An important function of the test department is concerned with new material developments or new applications of materials. This sometimes consists in examining products offered for sale to the railroad which may have advantages over those being used or it may consist in cooperative development work with manufacturers, looking toward the production of some new or modified product which will better serve the railroad's need. This is a continuing project and involves close cooperation with other departments, as well as with producers. It does not follow a routine pattern, since each such situation is peculiar to itself and must be handled on its merits. During the war, with material scarcities forcing frequent substitutions, there have been many situations of this sort.

Some of the projects of this class active at the present are: development of acceptable water treatment for the cooling systems of Diesel locomotive engines, including a field testing instrument to be used in the shops for daily checking of the treatment concentration. Development of improved methods of operating and improved materials for constructing the tubular flash boilers installed on Diesel passenger locomotives for train heating and air conditioning service. The continuing adaptation of paint specifications to meet war-time shifts in availability of raw materials, including the design of suitable testing instruments, looking toward better service life of the batteries used in trainmen's hand lanterns. Cooperative development with a commercial timber treating organization of a rapid method of seasoning crossties and bridge timber in preparation for creosoting. Development of a satisfactory flame hardening method for increasing the life of frogs manufactured at the railroad's shops at Charlotte, N. C. Improvement in design of split switch tie bars by substituting welding for riveting. Development of a protective coating for blast plates on overhead bridges.

Eliminating Failures

One of the best ways to avoid future trouble is to analyze present trouble, and, with this in view, the test department makes a great many studies of failures. Failed mechanical and other parts are sent to the laboratory and thorough post-mortems are conducted. Findings, with recommendations as to means of avoiding similar difficulties, are furnished to other departments of the railroad.

Hand in hand with the study of failures comes the study of materials in service. In cooperation with the various using departments, the test department is continuously conducting service behavior investigations. Improvements in bearing materials for locomotive driving axles have been effected in that way; studies of various designs of journal bearings are being conducted as a cooperative effort with an A. A. R. committee. Service testing of protective coating on track fixtures are under way, and the experimental use of a new method of heat treating a highly stressed forging is just beginning.

The test department on Southern is no cloistered group remotely studying abstract problems. Its work to be effective must be aggressive and vigorous. As time goes on, it becomes of increasing value to the entire railroad, and, as the material using and operating departments learn more of what the test department can do, they make more frequent and extended requests for help. Working with the tools of the laboratory, which are not otherwise available, the railroad is enabled to find out economically and quickly what might otherwise take costly, and perhaps dangerous, experiences to discover. Such work is not regarded by the Southern as an expense but as a means of effecting economies and improvements in operation.

Car Distribution in War-Time

Union Pacific achieves equitable distribution of empty cars in spite of war-time equipment shortages by the close co-operation and speedy transmission of complete, accurate information to central supervisory office

IN January, 1945, the average miles per car per day on the Union Pacific was 78.5, an increase of 4 miles over January, 1944. In February, 1945, this figure had further increased to 81.5, and in March to 84.7. Since, at the same time the per cent of loaded to total car-miles remained virtually constant, being 70.3 in January, 1945, 71.5 in February, and 70.8 in March, it is apparent that the Union Pacific's improved car-mileage performance was not due to an increase in the proportion of empty car-miles. To achieve such a record in the face of present day operating conditions with shortages of experienced men, reversed traffic flows, and unpredictable traffic demands, requires close supervision and thorough co-operation from all concerned.

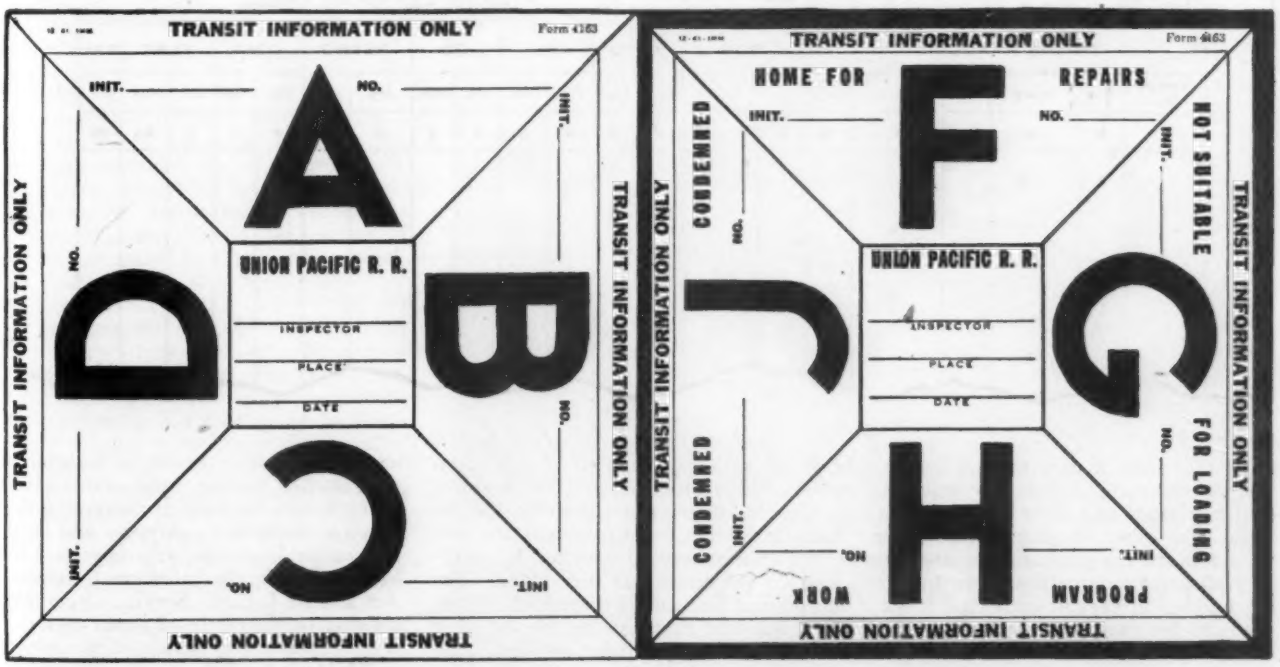
Empty Flow Reversed

Responsibility for car distribution on the Union Pacific rests with the general superintendent of transportation, who is located in Omaha, Neb. He exercises direct supervision over the Wyoming, Colorado, Nebraska and Kansas divisions and, through regional superintendents of transportation located at Salt Lake City, Utah, and Portland, Ore., he controls transportation matters on the remainder of the system. Local distribution of cars on the various divisions is under the jurisdiction of division car distributors who have no duties other than the handling of cars. Seven transportation inspectors, reporting to the general superintendent of transportation, are making continuous checks of car supply and car movements on the line and are, in fact, the "eyes" of the superintendents of transportation and of the car distributors.

Normally, the Union Pacific, along with other transcontinental railroads, loads more box cars on the Pacific Coast and at other points on its system for eastward movement than it unloads after westward movement, and under peacetime conditions there was a continuous flow of empty box cars reaching its rails at the major eastern junctions of Council Bluffs, Iowa; Omaha, Neb.; St. Joseph, Mo.; and Kansas City. Since the war, there has been a steadily increasing flow of traffic to the Pacific ports, with the result that the supply of empty box cars reaching the system at eastern gateways has virtually dried up, while at the same time the number of box cars released on the Pacific coast has risen to the point where it now exceeds the requirements for eastbound loading out of that area.

As a result of these conditions, the movement of empty box cars on the Union Pacific has been reversed and now flows from west to east. This fact, plus the simultaneous establishment of numerous munitions and ordnance plants along the railway's lines in Kansas, Nebraska, and Wyoming, and the further addition of record grain crop yields, has caused the area of greatest demands for empty box cars to be located at the maximum distance from the only possible source of suitable equipment, rather than at the minimum distance which would have prevailed had the flow of empty cars not been reversed. In addition, war-time restrictions on the production of civilian commodities have tended to reduce the number of cars made empty in this territory, which even in normal times loads more cars than it releases. The necessity of promptly moving the products of the munitions plants and the grain of this region has therefore brought about changed methods of car distribution and intensified supervision.

Under present methods of operation, each division reports to the general superintendent of transportation its local loadings, releases of empty cars, and orders for empty equipment. As a general rule the western divisions report surpluses of empty equipment, while those to the east require assistance. The reports of car orders are separated to



Empty Car Commodity Inspection Card Used to Convey Transit Information. Further Inspection and Cleaning May Be Necessary Before Car Is Placed for Loading

departments so that they may be advised that the materials in question are acceptable for use and that the vouchers may be paid. In the case of rejected materials, the matter is handled immediately and directly with the producer.

With the large number of samples handled by the laboratory, the paper work incident to keeping the other departments of the railroad properly informed is considerable. Every effort is made to simplify reports and printed forms are used in reporting wherever possible. As an example of the simplification of office work that can be accomplished, the following illustration is cited:

Formerly, in requesting a sample, for instance, of paint, the engineer of tests would write the storekeeper in question describing the material to be shipped and asking that a sample be submitted to the laboratory upon arrival. When the storekeeper submitted the sample, he had to describe it completely for identification purposes. Upon receipt at the laboratory, the sample required the preparation of work sheet identification, and, upon the completion of the test, a letter was written to the storekeeper advising him of the result. This involved repeated typing in various offices of the same descriptive information.

A printed form, reproduction of which is shown in Figure 1, has been prepared which eliminates all but one typing of this information. When the paper work so eliminated is multiplied by the thousands of times per year that this procedure is used, the saving is considerable.

Form TD-4

SOUTHERN RAILWAY SYSTEM

OFFICE OF ENGINEER OF TESTS

REQUEST FOR SAMPLE

Request No._____ Alexandria, Va._____

Material _____ Spec No._____

Order No._____ Requisition No._____

Manufacturer_____

Quantity_____

Requested from_____

Quantity desired for test_____ Tank Car No._____

Type of container sent for sample_____

Date forwarded to Lab._____ Received in Lab._____ Reported_____

This is to request that you forward to me for test purposes the sample described above. Duplicate copy of this form, attached herewith, is to be filled out with information requested and sent me at time sample is forwarded. Please observe instructions given below:

Please see that samples are tagged and marked clearly with request number shown above so that they may be identified. Samples should be submitted in containers forwarded to you for that purpose. Please use every care to see that samples are truly representative of the material and, for those items listed below, observe the appropriate requirement:

OIL, GASOLINE, LONG TIME BURNING OIL, ETC.—Take sample from dome of tank car or other original container.

PAINT—Stir paint in original container thoroughly before taking sample.

OIL SOAP—Obtain sample at least 6 inches away from top and sides of original container.

R. H. Beverley

Engineer of Tests

ORIGINAL—For file of office submitting sample.

Printed Form Which Serves as Request for Sample with Specific Instructions as to Procedure and in Its Triplicate and Quadruplicate (by the Elimination of the Printing Below the Double Ruled Line and the Substitution of Appropriate Phrases) Also Serves as a Notice of Laboratory Receipt and Finally as a Report of Results

New Material Developments

An important function of the test department is concerned with new material developments or new applications of materials. This sometimes consists in examining products offered for sale to the railroad which may have advantages over those being used or it may consist in cooperative development work with manufacturers, looking toward the production of some new or modified product which will better serve the railroad's need. This is a continuing project and involves close cooperation with other departments, as well as with producers. It does not follow a routine pattern, since each such situation is peculiar to itself and must be handled on its merits. During the war, with material scarcities forcing frequent substitutions, there have been many situations of this sort.

Some of the projects of this class active at the present are: development of acceptable water treatment for the cooling systems of Diesel locomotive engines, including a field testing instrument to be used in the shops for daily checking of the treatment concentration. Development of improved methods of operating and improved materials for constructing the tubular flash boilers installed on Diesel passenger locomotives for train heating and air conditioning service. The continuing adaptation of paint specifications to meet war-time shifts in availability of raw materials. Including the design of suitable testing instruments, looking toward better service life of the batteries used in trainmen's hand lanterns. Cooperative development with a commercial timber treating organization of a rapid method of seasoning crossties and bridge timber in preparation for creosoting. Development of a satisfactory flame hardening method for increasing the life of frogs manufactured at the railroad's shops at Charlotte, N. C. Improvement in design of split switch tie bars by substituting welding for riveting. Development of a protective coating for blast plates on overhead bridges.

Eliminating Failures

One of the best ways to avoid future trouble is to analyze present trouble, and, with this in view, the test department makes a great many studies of failures. Failed mechanical and other parts are sent to the laboratory and thorough post-mortems are conducted. Findings, with recommendations as to means of avoiding similar difficulties, are furnished to other departments of the railroad.

Hand in hand with the study of failures comes the study of materials in service. In cooperation with the various using departments, the test department is continuously conducting service behavior investigations. Improvements in bearing materials for locomotive driving axles have been effected in that way; studies of various designs of journal bearings are being conducted as a cooperative effort with an A. A. R. committee. Service testing of protective coating on track fixtures are under way, and the experimental use of a new method of heat treating a highly stressed forging is just beginning.

The test department on Southern is no cloistered group remotely studying abstract problems. Its work to be effective must be aggressive and vigorous. As time goes on, it becomes of increasing value to the entire railroad, and, as the material using and operating departments learn more of what the test department can do, they make more frequent and extended requests for help. Working with the tools of the laboratory, which are not otherwise available, the railroad is enabled to find out economically and quickly what might otherwise take costly, and perhaps dangerous, experiences to discover. Such work is not regarded by the Southern as an expense but as a means of effecting economies and improvements in operation.

BEST COPY AVAILABLE

Car Distribution in War-Time

Union Pacific achieves equitable distribution of empty cars in spite of war-time equipment shortages by the close co-operation and speedy transmission of complete, accurate information to central supervisory office

IN January, 1945, the average miles per car per day on the Union Pacific was 78.5, an increase of 4 miles over January, 1944. In February, 1945, this figure had further increased to 81.5, and in March to 84.7. Since, at the same time the per cent of loaded to total car-miles remained virtually constant, being 70.3 in January, 1945, 71.5 in February, and 70.8 in March, it is apparent that the Union Pacific's improved car-mileage performance was not due to an increase in the proportion of empty car-miles. To achieve such a record in the face of present day operating conditions with shortages of experienced men, reversed traffic flows, and unpredictable traffic demands, requires close supervision and thorough co-operation from all concerned.

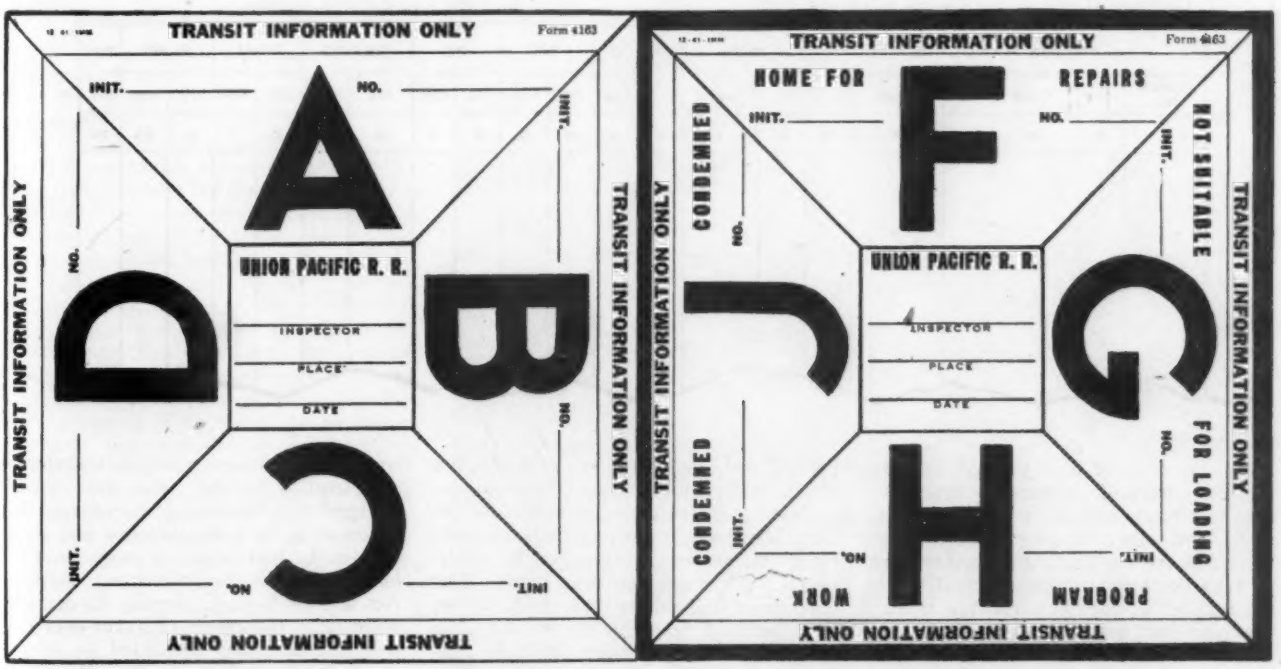
Empty Flow Reversed

Responsibility for car distribution on the Union Pacific rests with the general superintendent of transportation, who is located in Omaha, Neb. He exercises direct supervision over the Wyoming, Colorado, Nebraska and Kansas divisions and, through regional superintendents of transportation located at Salt Lake City, Utah, and Portland, Ore., he controls transportation matters on the remainder of the system. Local distribution of cars on the various divisions is under the jurisdiction of division car distributors who have no duties other than the handling of cars. Seven transportation inspectors, reporting to the general superintendent of transportation, are making continuous checks of car supply and car movements on the line and are, in fact, the "eyes" of the superintendents of transportation and of the car distributors.

Normally, the Union Pacific, along with other transcontinental railroads, loads more box cars on the Pacific Coast and at other points on its system for eastward movement than it unloads after westward movement, and under peacetime conditions there was a continuous flow of empty box cars reaching its rails at the major eastern junctions of Council Bluffs, Iowa; Omaha, Neb.; St. Joseph, Mo.; and Kansas City. Since the war, there has been a steadily increasing flow of traffic to the Pacific ports, with the result that the supply of empty box cars reaching the system at eastern gateways has virtually dried up, while at the same time the number of box cars released on the Pacific coast has risen to the point where it now exceeds the requirements for eastbound loading out of that area.

As a result of these conditions, the movement of empty box cars on the Union Pacific has been reversed and now flows from west to east. This fact, plus the simultaneous establishment of numerous munitions and ordnance plants along the railway's lines in Kansas, Nebraska, and Wyoming, and the further addition of record grain crop yields, has caused the area of greatest demands for empty box cars to be located at the maximum distance from the only possible source of suitable equipment, rather than at the minimum distance which would have prevailed had the flow of empty cars not been reversed. In addition, war-time restrictions on the production of civilian commodities have tended to reduce the number of cars made empty in this territory, which even in normal times loads more cars than it releases. The necessity of promptly moving the products of the munitions plants and the grain of this region has therefore brought about changed methods of car distribution and intensified supervision.

Under present methods of operation, each division reports to the general superintendent of transportation its local loadings, releases of empty cars, and orders for empty equipment. As a general rule the western divisions report surpluses of empty equipment, while those to the east require assistance. The reports of car orders are separated to



Empty Car Commodity Inspection Card Used to Convey Transit Information. Further Inspection and Cleaning May Be Necessary Before Car Is Placed for Loading

Form 4688—Second Sheet

Local

(PX) **TELEGRAPHIC REPORT, MOVEMENT OF EMPTY CARS BY TRAINS.**

24 hours ending 3 AM_____19___ _____Division_____Sub. Divn.

Time filed_____M From_____Station.

To Supt. Car Service Omaha.

BG EMPTY CARS RECEIVED FROM AND DELIVERED TO CONNECTING DIVISIONS, BY CLASSES

DIVISION POINT	BOX		AUTO		SD		DD		REFRG		COAL		FLAT		BAL
	No.	CLASS	SYS.	FGN.	SYS.	FGN.	SYS.	FGN.	PFE	FGN.	SYS.	FGN.	SYS.	FGN.	SYS.
	H	J	K	M	N	Q	R	S	U	W	X	Y	Z	BA	BC

BH EMPTY CARS SET OUT OR WAITING MOVEMENT AT PRINCIPAL STATIONS, BY CLASSES

STATION	H	J	K	M	N	Q	R	S	U	W	X	Y	Z	BA	BC

These Daily Reports to Superintendents of Transportation Enable Him to Allocate Cars Among the Various Divisions. Note the Column for Commodity Classification of Box Cars

Form 4688—First Sheet

Local

(PX) **TELEGRAPHIC REPORT, MOVEMENT OF EMPTY CARS BY TRAINS**

24 hours ending 3 AM_____19___ _____Division_____Sub. Divn.

Time filed_____M From_____Station

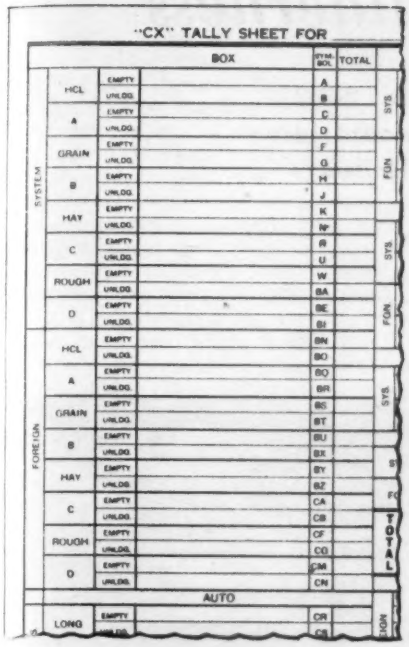
Columns B and D use station telegraph call. To Supt. Car Service, Omaha.

TRAINS HANDLING						BOX		AUTO		SD		DD		REFRG		COAL		FLAT		BAL
TRAIN No.	FROM	TIME	TO	TIME	DATE	No.	CLASS	SYS.	FGN.	SYS.	FGN.	SYS.	FGN.	PFE	FGN.	SYS.	FGN.	SYS.	FGN.	SYS.
A	B	C	D	F	G	H	J	K	M	N	Q	R	S	U	W	X	Y	Z	BA	BC

show the class of cars wanted and are further separated as between orders to load munitions and other vital war material and other loadings. Acting on these reports, the general superintendent of transportation notifies each division the number of cars of each type it may use and instructs the disposal of any empty cars in excess of that number. By this means all divisions of the railroad are treated equally, regardless of the fact that some may have a local supply of cars adequate for their own needs, while others report shortages.

Current instructions prohibit the reloading of box cars at terminals and outlying stations until inspection by qualified car inspectors has been made. The purpose of this rule is three-fold. First, it is believed that, due to the intensive use of freight cars under war-time conditions, this inspection is necessary before cars are loaded in order to find defects that may cause delays to road trains en route or result in transfer of the load. Second, the railroad is charged with the duty of preventing discrimination between shippers and localities in the furnishing of empty cars for loading both by the Interstate Commerce Act and by I. C. C. Service Order 244, relating to placement of grain cars.

If shippers are permitted to reload, or if local conductors are allowed to place empty cars, picked up on line, indiscriminately at local stations, it be-



"CX" TALLY SHEET FOR

			BOX	SYM. BOL	TOTAL	
SYSTEM	HCL	EMPTY		A		SYS.
		UNLDG.		B		
	A	EMPTY		C		
		UNLDG.		D		
	GRAIN	EMPTY		F		FGN.
		UNLDG.		G		
	B	EMPTY		H		
		UNLDG.		J		
	HAY	EMPTY		K		
		UNLDG.		NF		
	C	EMPTY		R		SYS.
		UNLDG.		U		
	ROUGH	EMPTY		W		
		UNLDG.		BA		
	D	EMPTY		BE		FGN.
		UNLDG.		BI		
FOREIGN	HCL	EMPTY		BN		
		UNLDG.		BO		
	A	EMPTY		BQ		SYS.
		UNLDG.		BR		
	GRAIN	EMPTY		BS		
		UNLDG.		BT		
	B	EMPTY		BU		
		UNLDG.		BX		B
	HAY	EMPTY		BY		
		UNLDG.		BZ		FC
	C	EMPTY		CA		
		UNLDG.		CB		TOTAL
	ROUGH	EMPTY		CF		
		UNLDG.		CG		
	D	EMPTY		CM		
		UNLDG.		CN		
AUTO						
	LONG	EMPTY		CR		FGN.
		UNLDG.		CS		

Section of Daily Wire Report Made by Larger Yards Showing Cars on Hand. Report Showing Same Information But in Different Form Submitted by All Other Yards and Stations

comes virtually impossible to prevent discrimination among stations or shippers in the furnishing of empties. Finally, maximum utilization of car demands that class "A" cars be used only for class "A" loading. To check to see that empty cars are not confiscated at local stations, the division car distributor receives weekly reports of local loadings which he matches against his record of empty cars dispatched to each station, thus quickly highlighting any discrepancies.

Using the eastward movement of empty cars from the Los Angeles division as an example, car distribution follows this pattern. As the empty cars are assembled in the various terminals they are given thorough inspection, including commodity classification. Daily telegraphic reports to the general superintendent of transportation show the number of cars loaded; the number of empties available, by kinds and commodity classification; and the estimated requirements for cars. Based on this information, the general superintendent of transportation allocates a percentage of the cars to the Los Angeles division and orders the movement of the remainder eastward, if required, or in home route if not needed—an unheard of procedure under present conditions.

Upon receipt of this advice, the local car distributor issues disposition instructions to yardmasters and those cars allocated to the division are switched out. Those moving through to other districts are blocked and placed on eastward symbol freight trains. When these trains are checked prior to departure, the yard clerk checks the commodity classification in addition to the initial and number and this information is transmitted to the general superintendent of transportation and to the next terminal as a part of the telegraphic consist of the train.

From these reports, the anticipated number of empty box cars, classified according to fitness for commodity loading, available at any point on the railroad, may be forecast with a fair degree of accuracy, and disposition instructions are given the car distributors on each division which allow them to intercept a specified number of empty box cars, according to commodity classification. Yardmasters and division car distributors are not permitted to intercept empty cars moving through their terminals that are assigned to other divisions. To see that this is not done, reports of receipts and forwardings of empty box cars moving through each terminal or division are checked against allocations to that terminal or division.

Confiscation of Cars Prevented

While the close check made by the general superintendent of transportation is an effective means of preventing confiscation of cars en route to other divisions, an even more effective measure is the knowledge, through reports from connecting divisions, of the number and kind of empty cars en route and their probable time of arrival. The division car distributor is not forced to sit in the dark and distribute cars on a "hand-to-mouth" basis. Based on his experience and on daily wire reports of cars on hand at stations, he can estimate closely releases on his own division; and he has before him accurate reports of the assistance he will receive from connecting divisions. Consequently, he is able to plan his local car distribution with a considerable degree of certainty and is not likely to be tempted to "steal" cars moving through. Likewise, the car distributors on the Kansas and Nebraska divisions, which are now the most distant from the source of empty cars, are assured of receiving their share of the empty equipment available to the system, although there is, of course, no guarantee to any division that all of its requirements will be met.

Local distribution is left entirely to the division car distributors, subject to check by the transportation inspectors. In addition to distributing empty cars, the division car distributors police the loading and unloading records of industries, freight houses, and company material cars. Incidentally, it should be mentioned that box cars assigned to commercial service, either system or foreign, cannot be used for company material loading without specific authority of the division car distributor.

Six of the seven transportation inspectors have assigned territories, while the seventh is used over the entire system on special assignments. These transportation inspectors are experienced men and, in addition to their duties of policing car handling and transportation matters, frequently assist the division car distributors through peak periods such as the grain movement.

* * * *

Bangor & Aroostook Train No. 1 Leaving Sherman, Me.

Transportation in the Wilderness

Army Transport Corps delivers three U.S.A. 2-8-2 meter-gauge locomotives 500 miles over mountain roads and through mud from India to Burma Railways

By LT. COL. MARION B. RICHARDSON

Transportation Liaison Officer, Advanced Headquarters, Allied Land Forces, Southeast Asia

ON New Year's Day, 1945, I was transferred to Advanced Headquarters, Allied Land Forces, Southeast Asia, to serve as Transportation Liaison Officer for the British and Indian forces in Burma. This headquarters was known as "ALFSEA." The U. S. Army officers were grouped into a section commanded by a brigadier general, U. S. A., for purposes of administration. Our work and activities were under the direction and supervision of the British. My boss was a British brigadier and my opposite number a British colonel.

For the past ten months I had been serving in New Delhi as Director of Supply for Transportation. Getting that job organized and operating to the satisfaction of G-4, S. O. S., had been a headache, with plenty of hard work and difficulties. I moved from New Delhi to ALFSEA happy in the thought that I was getting away from a lot of grief and into a nice soft job that would be the equivalent of a vacation.

Rounding a Turn in the Chin Hills

Battle Situation in Burma

By January, 1945, the British 14th Army had cleared the Chin hills, crossed the Chindwin river, captured Ye-u and had the Japs on the banks of the Irrawaddy river. The American-Chinese forces had captured Myitkyina. A railway detachment, drawn from the U. S. Army Railway Battalions operating the Bengal & Assam Railway from Parbatipur, India, to Ledo, Assam, was operating the north end of the Burma State Railways from Myitkyina as far south as Mawhan. This detachment had recovered a number of cars and several locomotives from the mess left by the Japs and the U. S. Army Air Force. However, most of the motive power was provided by jeeps converted from road to rail service. This portion of the rail line was utilized primarily for the supply of Chinese, British and American troops advancing from the north and east of the Irrawaddy river on Lashio and Mandalay. Supplies were brought forward via the B. & A. and over the "Hump" to Myitkyina, and then south on the Burma rail line.

The eastward advance of the 14th Army was to connect up with these Allied Forces for a combined attack on Mandalay. At the same time the 14th Army was operating to the south toward Alon and Monywa, an operation which eventually hooked up with the British and Indian forces that were landed at Akyab.

As these combined operations successfully progressed, getting certain strategical portions of the Burma State Railways into operation became all the more urgent. The monsoon rains which ordinarily break about the middle of May make unimproved roads impassable for truck transportation. The L. of C. for supply by ground to the 14th Army was by road from Manipur Road via Kohima, Imphal, Tamu and to Kalewa on the Chindwin river.

A Feat of Military Engineering

The highway from Manipur Road to Kalewa is one of the military engineering feats of history and is comparable to the Stillwell Road. A short time ago, in 1942, this highway was merely a rough track through the jungles and Chin and Naga hills over which the British withdrew on their famous trek out of Burma.

By February, 1945, the Royal Engineers had metal surfaced and built a modern highway from Manipur Road to Tamu, that would be a credit to any section in the United States with similar terrain, and were completing the construction south from Tamu to Kalewa with the objective of finishing the highway before the monsoon season. The plan for the ground L. of C. into Burma was from the depots around Calcutta, via B. & A. to Manipur Road, via highway to Kalewa, down the Chindwin river and thence to points on the Burma State Railways as they were made available by the advance of the 14th Army.

Considerable portions of rail line were torn up, bridges destroyed, and rolling stock overturned, burned or hid in the jungle. However, the British estimated they could recover a rough 25 per cent of the rolling stock. Needed rail lines could be restored by taking up the rails from lines not needed for military purposes and from sidings. Bridges could be replaced or rebuilt with reasonable rapidity with modified Baily bridge sections or by actual reconstruction. There were long bridges over the Irrawaddy river, chaungs (dry stream beds that become rivers during the rainy season), and other rivers that could not be restored as quickly as desired. This made it necessary to operate individual portions of the rail line as independent lines until the necessary connecting construction could be completed.

The Japs had left a few locomotives that could be recovered. Jeep operation is a makeshift at any time. A jeep can haul but one 15-ton car load and be expected to stop within a safe distance. Jeep trains are operated in convoys, one jeep per car.

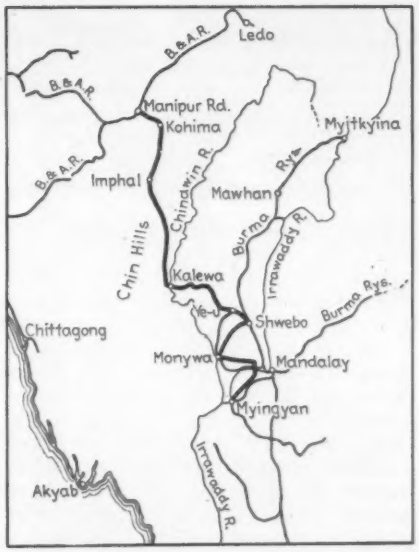
Such was the tactical situation when the writer reported for duty at ALFSEA. One of the first questions he was asked was the practicability of getting McArthur 2-8-2 type meter-gauge locomotives into Burma via the Manipur Road to Kalewa, across the Chindwin river and, via Ye-u, to Shwebo on the Burma State Railways. Reports from the 14th Army Engineers and other sources had stated that such a project would be impossible because of the bulk of the loads and the length of highway trailers required to transport such loads. Although the Naga and Chin hills are called "hills," they are actually mountains comparable to our Appalachian chain. They are the southern continuation of the Himalayan Mountain formation with elevations of from 8,000 to 14,000 ft. Although the Royal Engineers have widened and metal-surfaced the road, nevertheless they had to leave some very sharp curves because of the rugged mountain formation.

If the project were undertaken, it would be necessary to borrow the long trailers and prime movers from the U. S. Army. So I was ordered to make a reconnaissance of the road from Manipur Road to Shwebo. However, the 14th Army was advancing rapidly towards Mandalay, and Alon and Monywa were later designated as the points for possible delivery of the locomotives. The delivery point was eventually decided to be Myingyan by the time it was obvious that the town was going to be captured at an early date.

The reconnaissance party, consisting of myself, a captain from the Royal Engineers, and Pvt. Frank C. Claypool, U. S. Army, assembled at Manipur Road, January 27, 1945. We proceeded to Kalewa and crossed the Chindwin river February 2, arriving at Shwebo February 4.

The Road Reconnaissance

The Japs had torn up all of the rails at Shwebo and it was a very busy spot for the 14th Army, which was at that moment fighting the Japs a few miles east. I decided that Shwebo would not be such a good spot to attempt assembling the locomotives, so we continued our reconnaissance north along the rail line to the vicinity of Kanbalu. It was inadvisable to continue our reconnaissance further as there were only three in our party and there were a considerable number of Japs in the area who had stayed behind to sabotage or had infiltrated through the lines to disrupt or interfere with supplies to our forces.



The 523-Mile Route Across the Chin Hills from Manipur Road to Myingyan on the Burma State Railways

At Kinu there was no other military activity. The rails and switches were in place and the Japs had only drawn the spikes. Furthermore, there was a 30-ton wrecker on its side, partially dismantled, which could be recovered and used to assemble the locomotives. There was flat ground next to the tracks, water, and a good camp site for the railway troops that would be sent in to assemble the locomotives and to operate the line.

As the 14th Army had not as yet captured Alon or Monywa, I made a map reconnaissance of that area and, from personal observations, maps and aerial photographs, I reported that locomotives could be delivered by road to any point on the Burma State Railways east of the Chindwin river. I returned to ALFSEA on February 9, 1945.

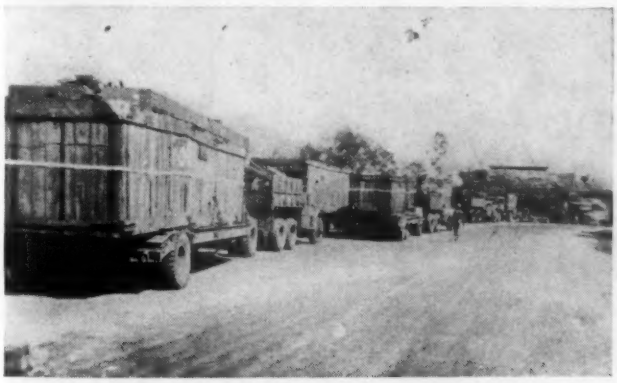
The report that the job could be done, which was contrary to previous reports, raised considerable controversy. Sitting in on all this began to raise qualms in my stomach. I dreaded the reaction if the job were attempted because of my report and then fizzled out. In any event, I was holding the bag, so I volunteered to do the job. The offer was accepted and I started out to secure and assemble the necessary personnel and equipment.

Personnel and Vehicles

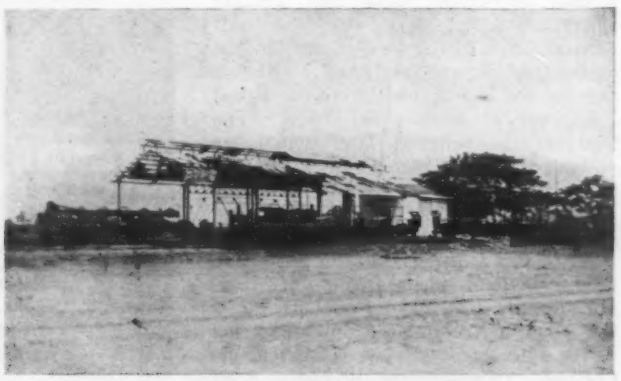
Securing the equipment necessary to do the job proved to be nearly as tough as that of geting the locomotives through. The 14th Army could spare only a few Diamond-T prime movers and Rogers tank transporters. It was considerably ahead of schedule and the situation on its front had become extremely fluid. It had got into good tank terrain and it needed all of its tank transporters to get tanks forward. The U. S. and Chinese armies had just got the Stillwell Road open. Every road vehicle, trailer and prime mover were urgently needed to start badly needed supplies into China.

When you get into a situation like this, there is only one thing to do and that is put it up to the generals to decide. Practically every brass hat in the theater had his two bits in the pot, by the time we had secured the vehicles to do the job. We had to get everything into the railroad yard at Manipur Road so that we could get the cars unloaded promptly. If we had blocked the principal rail head for the 14th Army at that time, I hate to think of what might have happened.

The three locomotives were stored knocked down in crates at the back shops of the B. & A. at Kanchrapara, a few miles north of Calcutta. The tires had to be turned from A. A. R. standard contour to that of the Indian railways. We secured nine six-ton six-by-six prime movers from off shipboard at Calcutta. Nine 20-ton U. S. Army Engineer Corps trailers were procured from the Engineer Supply Depot, also at



Part of the Convoy at Manipur Road



Myingyan Where the Locomotives Were Delivered—The Engine Shed Is in the Background

Calcutta. Four 40-ft. wrecking trailers were borrowed from the Bengal air depot near Calcutta, which outfit also loaned us eight drivers experienced in handling these long trailers. These vehicles and the three locomotives had to be loaded on broad-gage cars, moved to Parbatipur where they were loaded on meter-gage cars, and then taken to Manipur Road.

We had exactly fifteen army headquarters, depots and railroad offices to coordinate to insure that the vehicles arrived in the congested yard at Manipur Road so that we could unload the vehicles, service them and have everything ready to unload the locomotives when they arrived.

Convoy Assembled at Manipur

Military Railway Service, U. S. A., loaned us a wrecker and wrecking crew from a railroad operating battalion stationed at Mariani, Assam, to unload the cars and load the trailers and prime movers. Capt. L. H. Ashby, from the Chicago, Burlington & Quincy, bossed the unloading. A lieutenant in the British Army reported the following evening with 36 BOR's (British Other Ranks), and five Diamond-T prime movers and Rogers tank transporters. Next morning a lieutenant from the Indian Army reported for duty with 42 Indian IOR drivers (Indian Other Ranks) and 18 six-ton trucks.

I was tempted to bump my head against something hard to make sure I was not dreaming when I saw the international outfit that I was to command. I was not worried so much about the GI's and BOR's working together. I had briefed the GI's prior to their departure for Manipur Road and they knew they would have to live for two months or more on tea and British field rations. But when you take over an Indian detachment you get caste Hindus and Moslems. Some eat meat specially cooked; some are vegetarians. The Indians eat two meals a day, one at daybreak and the other at dusk. The GI's want three square meals a day and all they can get between times. The BOR's want the same, plus tea in the middle of the morning and late in the afternoon. It was all very simple. I made the British lieutenant mess and welfare officer.

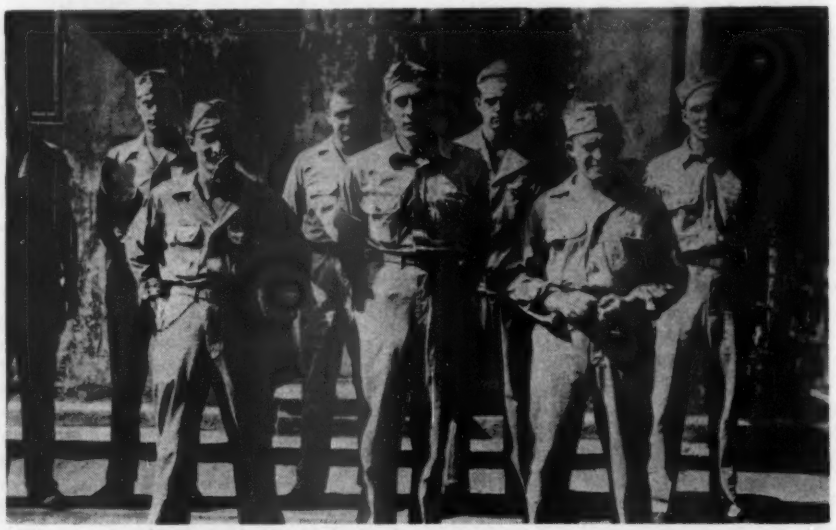
In addition to the British and Indian lieutenants, I was assigned a British captain and a lieutenant from the Royal Engineers as convoy assistants. The captain was relieved later when we arrived at Imphal because his outfit had received orders to move, so the two British officers, one Indian officer, and I completed the job.

It required three days to load and secure the loads to the trailers at Manipur Road. Convoy movements along the road are regulated by a section of the 14th Army known as Movements Control. This office prepares your movement orders and lays out a schedule according to the priority you have been assigned. We were scheduled to leave Manipur Road on April 3, 1945, and arrive at Kalewo April 15, 1945. The schedule was in easy stages, averaging about 35 miles per day, and we arrived at Kalewa on April 15.

From Manipur Road to Kalewa

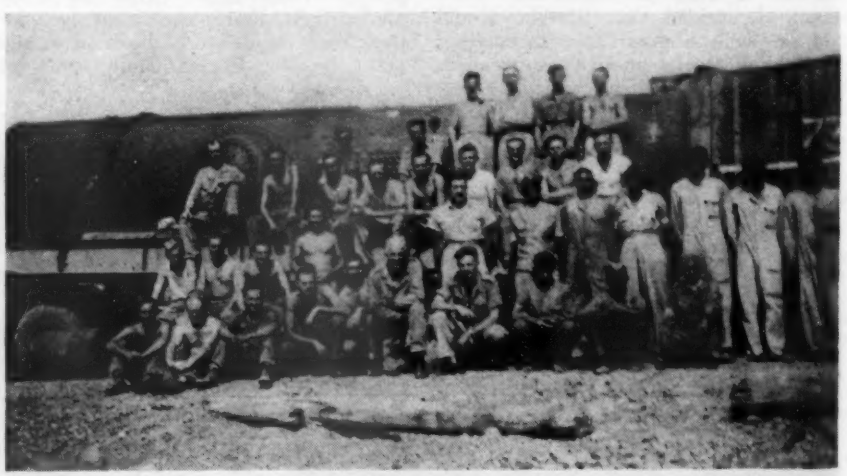
From Manipur Road to Kalewa (284 miles) the trip was not made without troubles. We had to back and fill around a number of sharp turns and bridge approaches, which involved maneuvering a trailer with drawbar connection to the prime mover. There were many diversions through the jungle south of Tamu where the going was pretty rough. One of the U. S. Engineer trailers developed a cracked frame and we had to transfer the load (one of the locomotive boilers) to an Albion articulated trailer which I commandeered. We had a number of near accidents descending the long grades through the Naga and Chin hills. The U. S. Army six-ton six-by-six prime movers were not quite heavy enough; neither do they have the braking capacity for such long down grades. It took a lot of courage and skill on the part of the BOR's and GI's who were driving these loads to handle their vehicles down the long, steep grades and around the sharp curves. Several times drivers had their cab doors open ready to jump just in case their trucks decided to take a short cut down the side of the mountain.

When we assembled at Manipur Road the plan was to take the locomotive to Kalewa, load the loaded trailers on RCL craft and Higgins barges, and take them down the Chindwin river to Myingyan. However, no river craft were ready for us when we arrived at Kalewa and none could be made available for some time. Here, again, the rapid ad-



The Eight GI's of the "McArthur Locomotive Convoy"

Left to Right, Front Row: Pfc. Thomas L. Dwinnel, Sgt. George E. DeBord and Sgt. Harold R. Cross—Back Row: Cpl. George Gantz, Jr. (partly in the picture at the left), Cpl. Frank D. Claypool, Pfc. Robert R. Walker, Pfc. James J. Launius, and Pfc. Oral M. Melvin.



Some of the GI's, BOR's, and IOR's Who Drove the Heavy-Duty Trailers and Prime Movers from Manipur Road, Assam, to Myingyan, Burma—The Photograph Was Taken About 50 Miles North of Kalewa

vance of the 14th Army had not only changed our destination but had created a critical situation with respect to river craft which were needed to transport ammunition and other combat supplies.

There was no equipment at Kalewa for heavy lifts. I had been directed to return the U. S. Army personnel and vehicles by May 1, 1945. If we dropped our loads on the river bank at Kalewa, there was no telling when, if ever, the locomotives would get to Myingyan.

Lt. Gen. Raymond A. Wheeler, U. S. A., Deputy Supreme Commander, Southeast Asia Command, arrived at Kalewa April 17, 1945, and inspected the "McArthur Locomotive Convoy," as it had been officially designated. The general had been informed as to the situation. He asked me if I could take the locomotives through by road. I told him I could, and he ordered me to do so. There are times when it is mighty nice to have a brass hat around.

Across to Chindwin

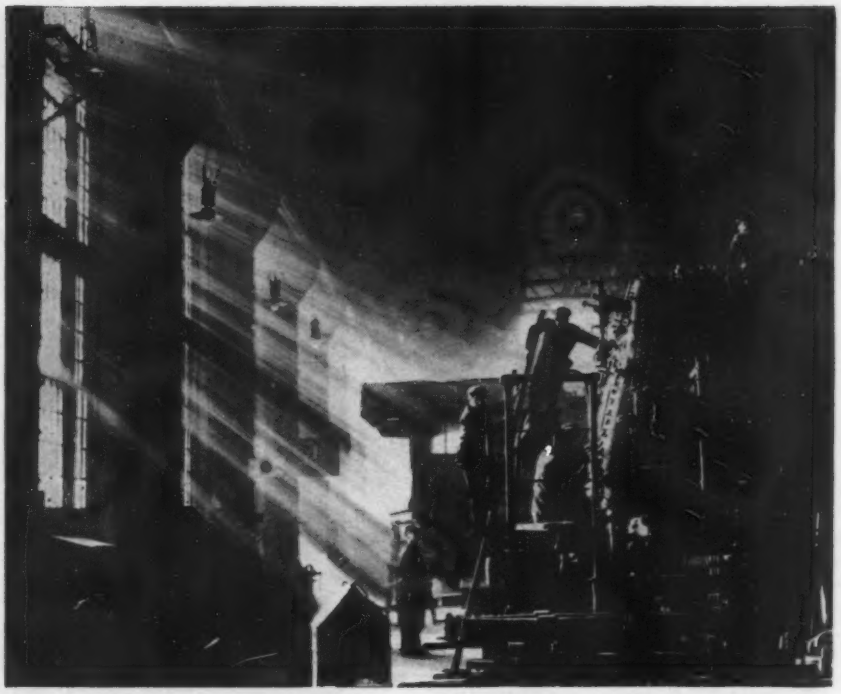
We were eight days being ferried across the Chindwin. The ferry trip is a seven-mile haul down stream from Kalewa to Shwegyin. The ferrying operation from Kalewa was completed April 21, 1945. We bivouacked at Shwegyin over night prepared to move out the following morning. The pre-monsoon rains broke that night.

I made a reconnaissance of the road for about ten miles, returned to the bivouac area, and we moved out about two o'clock that afternoon.

From the Chindwin to Ye-u

The road from the Chindwin to Ye-u (98 miles from Kalewa) was a track through the jungle and about the only improvements that had been made, if you can be careless with the word "improvements," was what work could be done with bulldozers. Fills had been made around the hills and the road had been widened. It was not intended to do more to this road than just that, as it was required only to support the operations of the 14th Army in the area along the Irrawaddy north of Mandalay, which lasted only a few weeks. The road was bad when I had made my reconnaissance the first part of February, but it was worse than terrible now.

It rained every night during the haul from Shwegyin to Kaduma, a Burmese village about 45 miles northwest of Ye-u. This made the dirt roads slippery until nearly noon of the following day and until the hot tropical sun had dried them out. Where the road ran through thick jungles and the trees arched over, the road surface was always wet and slippery. Water was collecting beneath the sand in the chaungs and we had to shovel and winch each load through. At many places the hills were so steep that we had to use as many as three prime movers on each trailer load. If the reader has ever done any hunting along the old wagon roads through the forests of Central Pennsylvania, he will have a good idea of the kind of road we had to travel over.



Reading Locomotive Shop, Reading, Pa.

* * * *

Flat tires were of frequent occurrence. One trailer had 17 flats between Shwegyin and Kaduma. By the time the convoy arrived at Kaduma, we had no spare tires. This, plus mechanical failures to two prime movers, made it necessary for us to move what we could forward to Ye-u, remove wheels and tires from the trailers, load them into two prime movers, return to Kaduma, install the wheels and tires on the vehicles we had left behind, and bring the remainder of the convoy forward. We doubled in this same manner between Ye-u and Monywa (53 miles). I made six round trips in my jeep back to Ye-u to get the convoy through to Monywa.

Three-Day Wait for Tires

A message to ALFSEA for air shipment of tires brought quick results. We had to wait only three days at Monywa until the tires arrived and we could proceed to the Irrawaddy ferry. Our crippled prime movers were also repaired by a workshop company at that point. We were able to leave Monywa in good shape. The road from there to Myingyan (88 miles) was through flat country, except for the ferry crossing at Sameikkon (about halfway) which required two days.

Across the Irrawaddy

By the time we arrived at Sameikkon the area north and east of Myingyan was not yet mopped up. The 14th Army was making a bee-line for Rangoon as fast as it could to effect its capture before the rains broke. The Japs left behind could be accounted for later.

The convoy preceding ours was fired on by Japs who were hiding in the hills and I was alerted at Sameikkon to be prepared for hostile enemy action. I closed the vehicles in the convoy to 10 yards apart so as to have my men together as closely as possible. We were armed with pistols, rifles and tommy guns. Running a convoy at such close distance is not done when there is a possibility of bombing, artillery or mortar fire. We had air superiority and in previous instances the interference had been a hit-and-run affair, with nothing but rifle fire and a few hand grenades.

Fortunately, we saw no Japs. The BOR's and GI's were disappointed, but bullet holes in a locomotive boiler are difficult to patch up, especially in the field. I was just as well satisfied.

Myingyan

We arrived at Myingyan May 3, 1945, the day that Rangoon was captured. We delivered the three locomotives to the Indian 1st Railway Operating Company which started to unload and ecsemble them the following morning. As I watched them knock the boards off the boxes containing the tenders, with the letters U. S. A. on the sides, I felt as though I were watching the unveiling of the Statue of Liberty. I could see the men and women who built those locomotives at work. They produced the stuff. We had delivered them. Another job had been done by the Transportation Corps, U. S. Army.

Rock Island Has Electronics Car

Includes various types of radio equipment, aerials, power supply, oscillograph, meters and test apparatus

Trunk Radio Sets for Bridging Line Gaps

AS an aid in the development and testing of train communication equipment, the Chicago, Rock Island & Pacific has installed test equipment, meters and other laboratory apparatus in a car that can be used on passenger trains, as well as on freight trains. About a year ago some of this equipment was installed in a caboose, but such a car could not be hauled in fast passenger trains. In order to haul the electronic laboratory in any train, either passenger or freight, the Rock Island is now using a car which is equipped with high-speed trucks.

The work room, including benches and testing equipment, occupies the most important portion of this car. A combination office and radio room is located in the other end of the car. A separate small room, with sound-proofing, includes the gasoline engine driven generator. A small kitchen and bunks are available to accommodate up to 12 men while on long trips. The equipment in the car includes communication apparatus furnished by various manufacturers, including the Galvin Manufacturing Corporation, the Bendix Corporation, Hallicrafters, and Communications Company, Inc., and also some specialized

(Continued on Page 303)

Radio Equipment and Instruments in Laboratory

Detailed Demands in Op Wage Case

The brethren have asked for about all there is to ask for, while the railroads seek modification of existing rules which throw traffic to rival transport agencies

BY WAY of answer to the demands of the operating unions for wage increases and extensive additions to "featherbed" working rules, the railroads have countered with a demand for a considerable modification in the "featherbed" rules already in existence—the better to enable the railroads and their employees (including non-operating employees who do not enjoy these "featherbed" provisions) to meet the severe post-war competition of rival agencies of transportation, which are given a head start on the railroads by donations of billions of dollars of free property (highways, waterways, airports) at the taxpayers' expense.

The counter-demands of the railroads for a relaxation of the "featherbed" rules are summarized further on herein. The detailed demands of the "big five" transportation unions for wage increases and additions to their "featherbed" rules (reported briefly in the *Railway Age* of July 28, page 179) are summarized first. Two sets of virtually identical demands were served upon the carriers—one by the Brotherhood of Locomotive Firemen & Enginemen, the Order of Railway Conductors, and the Switchmen's Union of North America; and another set by the Brotherhood of Locomotive Engineers and the Brotherhood of Railway Trainmen. The following compilation is derived mainly from the presentation of the former group, but is given in abbreviated language:

The Unions' Demands

1. *Adjustment of Wage Rates.* An increase of $2.50 per basic day, with all other payments to increase in the same ratio. The Engineers and Trainmen ask for an increase of $2.50 or 25 per cent whichever exceeds.

2. *Standardizing Wage Rates Between Territories.* Western territory payments in no case to be less than those in the East and Southeast.

3. *Passenger Service.* Conductors and trainmen except in "short turn-around" (suburban) service to have a 5-hour, 100-mile basic day beginning at time reporting for duty—replacing the present 150-mile, 7½-hour basic day.

4. *Passenger Service—Overtime.* Six hours on duty within eight consecutive hours to be the limit for straight-time pay in suburban train and engine service; all time on duty or held for duty thereafter to be paid for at time-and-one-half. In non-suburban service, train and engine service overtime to begin whenever speed basis (computed from time employees report for duty) falls below 20 m. p. h.; all passenger service overtime to be paid at time-and-one-half.

5. *Multiple-Unit Motormen.* In multiple-unit service, motorman to be paid the minimum passenger rate for the first car plus 8 cents and 9 cents alternately added for each additional motor car in the train. The Engineers and Trainmen propose a slightly different formula for calculating additional wages for additional motor cars.

6. *Minimum Rate, Engine Crews—Through Freight.* Milk trains, circus trains, and through freight engine crews to be compensated at the through freight rate for a minimum weight of 250,000 lb. on drivers.

7. *Minimum Rate, Engine Crews—Local Freight.* Local rates, at a minimum weight of 250,000 lb. on drivers, to be paid to crews of local, mine run, snow plow, pusher, helper, roustabout, road switcher, work, wreck, construction, transfer, belt line, and unclassified trains.

8. *Minimum Rate, Engine Crews—Yard.* To be paid the local freight rate with minimum weight of 250,000 lb. on drivers.

9. *Hostlers and Helpers.* Inside hostlers to receive the firemen's rate for local freight service at the 250,000-lb. minimum, with differential for outside hostlers and helpers to be maintained.

10. *Minimum Guarantee — Engine Crews.* All enginemen, including hostlers and helpers, to be paid the full hours of their customary assignment for each day they are not used—or, if they are used in service other than their regular assignment, to be paid not less than they would have earned on their regular assignment. Extra employees and those in pool service to be paid not less than a minimum day at rate for service they last performed for each day they are not used. Regular assignments may not be made for less than six days per week.

11. *Local Pay—Freight Train Crews.* For train service employees the rate for local freight service is to apply to local, mine run, snow plow, pusher, helper, roustabout, road switcher, work, wreck, construction, and unclassified runs.

12. *Minimum Guarantee — Freight Train Crews.* Same guarantee as for enginemen (see No. 10 above) plus a demand that employees in unassigned service be guaranteed a minimum of 3,000 miles per month, or pro rata thereof for each day they are available for service.

13. *Yard and Hostler Service Overtime.* Except where it is the practice for crews to change-over from day to night shifts and two shifts are worked to effect the change-over, or where employees shift jobs in exercise of seniority rights, time-and-one-half is demanded for all work done in excess of eight hours in any 24-hour period.

14. *Switch Tenders.* Yard switch tenders to be paid the rates of yard brakemen.

15. *Night Differential.* For all local freight, transfer or belt line, mine run, road switcher, yard, unclassified and hostler and helper service, 10 cents per hour to be added for all service performed between 6:30 p. m. and 6:30 o. m.

16. *Yard Conductor's Differential.* The pay of yard conductors to be not less than $1.50 more than the basic daily rate for yard brakemen.

17. *Initial Terminal Delay.* This delay in "all classes of road service" is defined as the period between the time employees are required to report for duty and the actual time of departure of their runs. The demand is that all such time in excess of 15 minutes be paid for at the road rate applicable to the class of service performed, and that such compensation be in addition to pay for the road trip.

18. *Final Terminal Delay.* This demand is for terminal delay pay, also to be in addition to pay for the road trip, for all time stopped after or before reaching yards, due to "yard conditions or preceding trains." Terminal delay time is to be counted until actually relieved from duty, i. e., it will include "time required to make inspection, complete all necessary reports and/or register off duty."

19. *Held at Other Than Home Terminal.* Engine and train crews, whether in assigned or pool service, to be paid at straight time for all time which elapses after 12 hours off duty at other than the home terminal—such compensation to be in addition to pay for the homeward trip or for deadheading.

20. *Held en Route.* Road crews to be paid additional compensation, with a minimum of one hour, at pro rata rates for all time held en route because of yard congestion or awaiting connections.

21. *"Conversion Rule."* Crews in all classes of service to be paid local freight rates when required to set out or pick up cars, to perform station switching, or to load or unload freight or company material.

22. *Qualifying, etc.* All train, engine, yard and hostler service employees to be paid for time consumed (not less than a basic day) for all time attending investigations, qualifying, etc., plus ex-

penses and pay for deadheading—and in no case to be paid less than time lost by such service. New employees in qualifying are to be paid not less than a minimum day's pay for each calendar day.

23. *More Than One Class of Service.* If crews are required to perform more than one class of service during a day or trip (such as road crews used to do wrecking) they shall be paid not less than a day's *extra* pay at the rate for the second class of service, in addition to pay for their original service.

24. *Deadheading.* Deadhead pay is to be at the regular rate for actual miles with a minimum of a basic day for the class of service they are called to perform—deadheading to home terminal to be paid at rates for the class of service last performed, and deadhead pay to be in addition to pay for other service performed.

25. *Attending Court.* Train, engine and yard employees required to attend court or inquest proceedings to be paid actual time, plus pay for deadheading and expenses—in no case to be less than pay which would have been earned if employee worked at his usual assignment.

26. *Doubling Hills.* Crews in any class of road service required to make a "lap-back", or "side" trip or to "double" a hill, to be paid at least a minimum day for such service in addition to all other earnings for the day or trip.

27. *Pay for Sundays and Legal Holidays.* All work performed in train, engine, yard and hostler service to be paid for at time-and-a-half on Sundays and legal holidays—January 1, February 22, May 30, July 4, Labor day, Thanksgiving day or Christmas, plus any other holidays officially designated.

28. *Points for Entering and Leaving Duty.* At each terminal and yard specific points are to be established by agreement where employees are to go on and off duty.

29. *Pilot Service.* An engineer and conductor will be used to pilot detouring trains.

30. *"Automatic Release."* Crews arriving at a terminal are to be "automatically released," except in suburban service or where other rules are applicable; "if used again, they begin a new day."

31. *Consist of Crews.* Crews employed in all classes of road service to consist of not less than one engineer, one fireman (helper), one conductor and two brakemen—except that three brakemen will be required for local, mine run, work, wreck and construction service; on light engines and helper service a crew will consist of an engineer, a fireman, and a conductor. In yard service a crew is to consist of not less than one engineer, one fireman (helper), one conductor and two brakemen, except that three brakemen will be used where yardmen are required to ride cars. Outside hostlers are to be furnished helpers at all times.

32. *Yard Work Defined.* Yard work, to be handled by yardmen and paid for at yard rates, is defined as the "switching, transfer, and handling of all freight and passenger equipment and construction, maintenance-of-way and work trains operating within switching limits; all ground pilot or herder service operating within switching limits; the giving or relaying of signals to yard engine crews and the coupling and uncoupling of cars and engines within switching limits; the throwing of ground switches (except those operated by switch tenders) within switching limits; the operating of hand brakes for controlling the movement of cars within switching limits, or the bleeding of air brakes on cars to be switched or marking cars for classification." The operation of this rule is not to abrogate, except by further negotiation and agreement, any rules or rights now enjoyed by road crews or hostler helpers.

33. *Yard Service—New Work.* Crews in yard service are to be paid for an additional day at time-and-one-half when required to perform other work after completing the minimum number of hours of their regular assignment.

34. *Release of Train Crews.* In all classes of road service except passenger, all members of a train crew to be relieved from duty as a unit.

35. *Train Limit.* No freight train to exceed 3,000 ft. or 70 cars in length and no passenger train to exceed 1,200 ft. or 14 cars.

36. *Doubleheading.* Trains of more than 40 cars, excluding caboose, may not be doubleheaded—except in case of accident, to bring a train into a terminal—crews to be paid double compensation for each violation; and a crew standing for the run of the additional train which could have been run if there had been no doubleheading to be paid as if it had made this trip. Even trains less than 40 cars may not be doubleheaded where tonnage exceeds rating of the larger engine—penalty payments to crews for violation to be similar to those mentioned above.

37. *Pay for Sick Leave.* All employees in engine, train, yard, and hostler service to be entitled to annual sick leave at basic daily rates—1 to 5 years service, 7 days; 5-15 years, 14 days; 15-20 years, 21 days; 20 or more years, 30 days. If sick leave is not used, it will accumulate from year to year.

38. *Eating and Sleeping Facilities.* Crews are not to be tied up at places where "satisfactory and adequate eating and sleeping accommodations are not available."

39. *Locomotive and Caboose Equipment.* All locomotives and cabooses are to be equipped with "suitable awnings, windshields, approved seats, supplied with cold drinking water, sanitary paper drinking cups, and, in addition, cabooses shall be equipped with electric lights."

40. *Flagging and Throwing Switches.* Engine crews shall not be required to perform such service.

41. *Assistance for Firemen.* On coal-burning locomotives, coal of suitable size for firing must be kept at all times where the fireman can reach it from the deck of the locomotive.

42. *Yardmasters to Be Chosen by Seniority from the Ranks.* The senior qualified yardman applying to be assigned to vacancies which occur in positions of yardmaster and assistant yardmaster.

43. *Road Foremen to Be Chosen by Seniority from the Ranks.* Road foremen and assistant road foremen of engines to be named "from the ranks of engineers and firemen on the seniority district where the vacancy exists."

44. *Watches.* Carriers to be required to supply watches at cost to all train, engine and yard employees who must carry them—cleaning and repairs to be at company expense and employees to be paid a minimum of two hours' wages whenever they are required to have watches inspected.

45. *Uniforms.* Where employees are required to wear uniforms, these are to be supplied, cleaned and pressed without cost to employees.

46. *Offices for Passenger Conductors.* Suitable desk and seating space for the exclusive use of conductors must be provided on all passenger trains.

47. *"Saving Clause."* Existing differentials and existing rules—where considered more favorable locally—are to be retained in the event of conflict with any of the foregoing.

Railroads' Counter-Demands

The railroads are opposing the demands of the operating unions for the foregoing wage increases and additions to "featherbedding" and, instead, are proposing the following modifications (language abbreviated) in existing working rules and practices in the payment of these employees, which constitute a hindrance to efficient and flexible railroad operation, and which call for a wide range of pay for work not done and pay for time put in to no effective purpose:

1. *Starting Time of Yard Crews.* Each regularly assigned yard crew to have a fixed starting time, which may be at any time designated—but subject to change on 24 hours' notice. Transfer crews may be started at any time, such changes not requiring advance notice.

2. *Road Crews Doing Yard Work.* Road crews may be called upon to make up their trains at initial terminal or to set out "no bills" and "b. o.'s", to do road switching, and to dispose of their cars at final terminal—whether or not yard crews are on duty at such terminals. Such work will be a part of their regular duties and they may not claim extra pay at yard rates for doing it; nor may yard crews claim pay for not doing it.

3. *Handling Freight in Passenger Trains.* When a train handling passengers, milk, mail, or express is composed entirely of cars equipped with "high-speed betterments," the crew will

be paid at passenger rates regardless of the class of commodity hauled. Where cars without these "betterments" are handled, crew will receive through freight pay for that part of mileage where such cars are handled. Where l.c.l. is handled in passenger, milk, mail, or express trains, only those crew members who actually load and unload such l.c.l. freight will receive pay at the local freight rate for the portion of the trip where such service is performed—all other employees to be paid at passenger rates. Company material handled on such trains is not to be considered l.c.l. freight.

4. *Time Limit on Claims.* Claims and grievances are barred from adjustment unless made in writing to proper officer within 30 days from date of occurrence, and appeals must be made in 30 days after claims are disallowed, in order for further consideration to be given them. Decisions of the highest officer designated to handle disputes are binding unless notice of rejection is given within 60 days—and adjustment board proceedings must be begun within six months of final decision by the railroad's highest officer designated to handle such cases.

5. *Reduction in Passenger Crews.* All rules or practices which prohibit rearrangement of runs to reduce the number of crews or which prohibit lengthening of runs or changing home terminals are to be abrogated.

6. *Self-Propelled Work Equipment.* Operating department employees are to have no claim to service on locomotive cranes, rail detector cars and other self-propelled maintenance-of-way, shop or stores equipment, when it is not used to switch cars except those required on the job being done. The management is to be the sole judge of the need for operating department employees in handling such work equipment and, when operating employees are required, will use yard conductors or road conductors, depending on the location of the work. Where yardmen are used, they will be paid the yard rate, while road men will be paid the work-train rate.

7. *Consist of Crews.* Management is to be sole judge of the number of employees to constitute a crew in any class of service.

8. *Switching Limits.* Management may change switching limits from time to time as it deems necessary.

9. *Motor Cars.* Management shall determine the need for train service employees on motor cars used with or without trailers for use in inspection, maintenance and communication work, and operating employees have no claim to such service.

10. *Computation of Time.* Time of engine, train, and yard crews is to be computed from the time required to report for duty until time relieved, regardless of different classes of work performed within the period—released time to be deducted in suburban (short turnaround) service.

11. *Engine Crews Handling Engines Between Station and Engine Terminal.* All rules which prohibit engine crews in any class of service from handling their engines between passenger station, yard and enginehouse and which require that yardmen, trainmen, herders, or pilots accompany engine crews or hostlers in these terminal movements shall be eliminated.

12. *Work on Succeeding Shift.* When a crew member on the next succeeding shift does not show up and the crew member of the preceding shift works through, he shall be paid straight time rather than at a penalty rate therefor. Members of a crew may do work for another crew—lining up switches, etc.—without additional compensation being paid by the company for such service.

13. *Coupling and Uncoupling Hose and Making Air Tests.* Trainmen may be called upon to do this work where carmen are not immediately at hand, without additional compensation being required therefor.

14. *Bleeding.* Any available employee on duty may bleed air brakes prior to switching, without additional compensation to anyone.

15. *Crew Unit Rule—Road Service.* The time of each employee will begin when he is required and does report for duty and will cease when he is relieved, without any requirement that time of crew members begin and end as a unit.

16. *Guarantees in Passenger Service.* In computing daily or monthly guarantees in passenger service, overtime payments may be added to other earnings to apply in the attainment of guaranteed minima.

17. *Runaround Payment.* Where a crew is paid for being runaround, such compensation will be made only to the crew standing first out when runaround occurred. When crews are called in turn but do not leave terminal in turn, no runaround payment will be made.

18. *Pay for Held-Away-From-Home-Terminal.* In the case of passenger service employees, the hourly rate to apply when "held-away" pay begins shall be one-eighth of the applicable daily rate.

19. *Flagging on Maintenance-of-Way Jobs.* Flagging on maintenance-of-way or construction jobs is a matter within the discretion of management and train service employees have no claim to this work.

20. *Payment for "Time Lost".* Where payments are made for "time lost" for any reason, earnings made in other employment while out of service shall be deducted from payments due.

21. *Interdivisional Runs.* Interdivisional runs in passenger or freight service may be established at management's discretion, with assignments arranged to equate mileage equitably between the seniority districts concerned—but there shall be no limitation on the traffic or cars to be handled on such runs.

22. *Train Limit Rules.* All rules which limit the number of cars or locomotives or tonnage or length of a train, or which specify the number of employees or call for extra compensation arising from the amount of equipment in a train, are to be eliminated.

23. *Limitations on Deadhead Pay.* Employees are not to be paid for deadheading to exercise their seniority, to relieve employees off duty, or to attend court. Employees are not to be paid for visiting the company doctor, for attending instruction classes or examinations, for attending investigations, or for learning the road or otherwise qualifying for service.

24. *Work Done by Yardmasters.* All rules which limit the work which may be done by yardmasters or other supervisors are to be eliminated.

25. *Promotion to Positions as Yardmaster.* All rules or customs which give yardmen exclusive or preferential right to promotion to positions as yardmaster or assistant yardmaster are to be eliminated.

26. *"Automatic Release".* There is to be no "automatic release" from duty on arrival at end of run.

27. *Short Turn-Around Freight Service.* Crews in assigned or pool service may be called on either a straight-away or turn-around basis where distance to turn-around point is less than 100 miles. If such crews are tied up at the turn-around point (except under Hours of Service Law), they will be paid 8 hours or 100 miles for the trip out and the same for the trip back. Where the run is continuous, with no tie-up, they will be paid miles or hours on a continuous basis. Crews may be used on one or more such turn-around trips at continuous pay, provided that last trip is started before expiry of 8 hours or 100 miles. Pool crews may be used on a short trip or turn-around preceding or following a road trip, providing start of such trip with time on the road trip comes within a compass of 8 hours.

28. *Conditions in Extra Passenger Service.* Where regular or extra passenger train crews are used to handle extra passenger trains or additional sections of regular passenger trains, they may be required to cover the same territory under the same conditions as crews of regular passenger trains.

29. *Right to Eliminate or Establish Yard Engine Service.* "The management has the exclusive right to establish or abolish yard service or yard assignments as in its opinion the necessities of the business require."

Rock Island Electronics

(*Continued from page 300*)

communication equipment developed by the Rock Island. The cathode ray oscillograph was made by Allan B. Dumont, the recording meters by Esterline Angus, the microvolter is from the Ferris Instrument Company, and the smaller portable electrical instruments are Weston. Various special pieces of apparatus were secured from the Sperry Gyroscope Company, the Dictaphone Corporation and others.

The car has three antennae. One

which is on top of the car is in the form of a vertical member with four horizontal members beneath it, and works with the 160-megacycle experimental equipment on which the railroad is doing some research work. At the other end is a long horizontal antenna mounted on insulators which connects to a receiver in the center of the car. This unit covers a range of 28 MC through 145 MC for general communications. The receiver operates on FM and AM signals.

On the end, and opposite the combination radio room-office, and on each side of the car are mounted the vertical steel rods which, when connected in parallel, comprise the antenna for the Motorola FM 30-40 MC transmitter-receiver which is in the office section of the car. A second handset is located in the laboratory room at the other end of the car. The console can be remotely operated from that position. Observation need be made at the console location during its operation. The unit is used for communications with the stations on the railroad where similar equipment has been, or is to be installed. The set operates while the car is in motion or stationary.

Primary power is furnished to the set of 115 volts a-c. from a Pioneed Gen-E-Motor 5 kv. gas-electric generator located in the power plant room at the same end of the car as the laboratory.

Laboratory Equipment

The laboratory includes a long work bench, with several drawers. Tools, instruments, meters and trouble-shooting equipment are provided. On another table along the opposite wall is a portable Dictaphone recorder which can be "patched" into any circuit, whether radio or telephone, for permanently maintaining a running log or keeping a record of electronic or traffic observations.

Two Motorola Handie-Talkie sets and two Motorola Walkie-Talkie sets are kept in a small closet in the laboratory room. Of regular U. S. Army Signal Corps type, these are used by ambulatory personnel when they must move away from direct contact with the car, yet maintain communications, especially in emergencies.

To Bridge Pole Line Breaks

Stored in a closet in this car are two self-contained, bridging, portable-fixed, radio transmitter-receiver units. Designed by Rock Island and built by Galvin, these trunk-mounted bridging units and their associated automatic ringing devices are employed when an extensive section of pole line is destroyed by a storm or flood, to maintain contact by combination of telephone or telegraph and radio. The end of the line wire at the break is fed to one unit, and the message is radioed over the break (up to about 35 miles). It is received with the other radio unit and sent to its destination over the unbroken portion of the line wires. To accomplish this, both bridging units are capable of "duplex" operation in that they transmit on one frequency and receive on another. FM-type emission is used to avoid interference from the usual electric railroad and power line devices, and to give independence of atmospheric and static conditions.

The bridging units are used with special antenna base supports which enable the crew to install temporary aerials of the vertical rod type, on top of the nearest telegraph pole. Or else, by pushing the base into the soft earth and mounting the vertical member, a self-supporting mast is created.

Radio installations were begun on Rock Island Lines under C. O. Ellis, superintendent of communications, and E. A. Dahl, electronic engineer, in March, 1944. The entire electronic field laboratory was developed and is under the supervision of Mr. Dahl. The laboratory and radio shop has given excellent service and has more than proved its worth in emergencies.

COMMUNICATION . . .

The Iron Mule

WALDEN, N. Y.

TO THE EDITOR:

A long time ago some smart man discovered that if he would cross a horse with a jackass, he would get an improved work animal which today we call a mule. It seems to me that the locomotive designers have passed up a good bet when they have not crossed the standard reciprocating steam locomotive with the Diesel-electric locomotive.

Articles on the subject in *Railway Age* have led me to the conclusion that the greatest practical advantage of the Diesel-electric locomotive is that it has the ability to develop a tremendous starting and low-speed tractive force. On the other hand, the modern standard reciprocating steam locomotives, such as the Norfolk & Western's No. 600 and the Pennsylvania's No. 6110, are not only able to out-perform the Diesel locomotive at speeds above 30 m.p.h. but have the advantage of comparatively low first cost and simplicity.

While the Pennsylvania's geared-turbine locomotive No. 6200 probably has other advantages, it has the inherent disadvantage of the No. 6110 of not being able to develop its maximum drawbar horsepower at speeds below 40 m.p.h. On the other hand, this engine is demonstrating that a steam turbine can be applied to a locomotive successfully.

During 1917 and 1918 William J. Bohan was granted three patents covering the hybrid engine above suggested and, when so much time and money is being spent to improve the steam engine, it is difficult for me, as a layman, to understand why Mr. Bohan's idea has not been tried out.*

In the closing paragraph of an article on page 925 of the May 26, 1945, issue of the *Railway Age*, Ralph P. Johnson, chief engineer of the Baldwin Locomotive Works, hits the nail on the head when he says: "These locomotives will out-perform a 5,400-hp. Diesel locomotive at all speeds about 26 m.p.h., as shown in Fig. 8 . . ."

There is a challenge to the designers of steam locomotives to make them better than the Diesel at all speeds. Twenty-five years ago the Diesel took over the marine field, but today the steam-turbine-driven ship can run rings around any Diesel-driven ship.

From the figures quoted by the American Locomotive and General Electric on page 12 of the May 19, 1945, issue of *Railway Age*, a tractive force of 35,000 lb. could be developed by a 400-hp. turbo-electric generator, with this power applied to the tender wheels by motors similar to but smaller than a 660-hp. Diesel-electric switcher.

It is fully realized that the problem is not quite as easy as it sounds. Nevertheless if engineers can build Diesel-electric locomotives and geared turbine locomotives such as the Pennsylvania No. 6200, they should have no trouble working out a system where a steam-turbine-driven generator, using part of the excess boiler capacity available, could apply electric power to the tender wheels in the same manner that the Diesel engine does.

Inasmuch as the electricity is already available, another point worth considering would be whether the overall efficiency could not be increased by using motor-driven draft fans, boiler feed pumps, and air compressors, thereby making it possible for the main engines and the turbine to exhaust at atmosphere.

If experience proved it to be desirable, the fact should not be overlooked that Fig. 6 and Fig. 7 of Mr. Johnson's article indicate that at a speed of 40 m.p.h. there is still available 20,000 lb. per hr. of excess steam-making capacity that could be applied to a steam turbine. At a water rate of 35 lb. per hp. hr., this would mean that there is more than 500 turbine hp. still available to boost the main steam engines. This, in turn, would mean that 2,000 hp. could be made available for starting. This would increase the tractive force by 138,000 lb., which would give the No. 6110 a total starting tractive force of 203,000 lb.

So it would appear on the surface that an "iron mule" could be developed that would out-perform any "iron horse" or any "iron jackass" ever made.

PAULSEN SPENCE

* All three of these patents dealt with the discharge of cylinder exhaust to the turbine, supplemented by steam from the boiler. The turbine exhaust passes through a water-cooled condenser. —Editor.

Railroads-in-War News

High French Awards for Brig. Gen. Gray

General Burpee and other top-ranking M.R.S. officers similarly honored

Brig. Gen. Carl R. Gray, Jr., director general, 2nd M.R.S., and Brig. Gen. Clarence L. Burpee, commander of the 2nd M.R.S., received one of the most cherished of French military decorations, the Croix de Guerre, at the Invalides, in Paris, July 19. Presentation of the cross with palm was made to the two generals by Maj. Gen. Koenig, Paris commander, who upon the same occasion made awards to 17 M.R.S. officers.

On July 11, General Gray received the Legion of Honor, Grade of Chevalier, and the Croix de Guerre with palm, in a formal ceremony at the Invalides from Gen. d'Armes Alphonse Juin, chief of staff of the French army. On this occasion, General Gray was one of 27 high-ranking American officers, including other generals, who were decorated by the French. General Gray's awards are many. For his services in North Africa and Europe, he has received the Legion of Merit for North Africa; the Order of the Crown of Italy; the Distinguished Service Medal for Italy and Southern France; and the Order of the British Empire, Grade of Commander, for service as Allied Forces Military Railway chief in Sicily and Italy.

General Gray, former general manager and executive vice-president of the Chicago, St. Paul, Minneapolis & Omaha, was called to active duty in May, 1942. He has commanded the First and Second M.R.S. in Europe since February, 1945, and under his direction, there has been close liaison with the French National Railway System in moving supplies for the five American armies and the First French army fighting on the western front.

Other M.R.S. officers, including 15 railroaders, honored at the July 19 ceremony, include:

Croix de Guerre with palm: Col. S. H. Bingham, of New York City (N. Y. Subway); Col. Benj. H. Crosland, Ft. Scott, Kans. (Frisco Lines); Col. L. E. Covin, Waycross, Ga. (A.C.L.); Col. W. S. Carr, West Haven, Conn. (N. Y., N. H. & H.); Col. L. G. Jamison, of Jersey City, N. J. (P.R.R.); and Col. Arthur E. Stoddard, of Cheyenne, Wyo. (U.P.)

Croix de Guerre with gold star: Lt. Col. H. G. Dennis, St. Paul, Minn. (C.R.I. & P.); Col. Benjamin H. Decker, Salt Lake City, Utah (D. & R. G. W.); Lt. Col. Ernest E. Foulks, Los Angeles, Cal. (Santa Fe); Col. O. W. Kempster, Peoria, Ill.; Lt. Col. C. S. Sanderson, Augusta, Ga. (A.C.L.); Maj. H. T. Ankerson, El Paso, Tex. (S.P.); and Maj. W. L. Hartzog, Wilmington, N. C. (A.C.L.).

Croix de Guerre with silver star: Capt. J. G. Beard, Amherst, Va. (So. Ry.); Capt. J. L. Bean, Sorento, Ill. (Nickel Plate); Capt. V. D. Raessler, Cherokee, Ia. (Ill. Cen.); and 1st Lt. J. T. O'Neil, Kansas City, Mo. (Santa Fe).

U. S. Army Signal Corps Photo

General Gray Receiving the Croix de Guerre, at the Invalides, in Paris

"Skippy" Adams' Ride a Legend of 713th

Battle-seasoned army railroaders talk of one hair-raising experience in E.T.O.

Certain tales have become legends to the battle-seasoned Santa Fe-sponsored 713th Railway Operating Battalion—yarns which have nothing actually to do with a battle proper but which have been spun out of the daily job of railroading. The ride of Conductor "Skippy" Adams is one such legend.

It was at dusk of an evening in December, 1943, when Leonard N. Adams was "doing a bit of switching" at Caserta, Italy. He had left a carload of steel beams on the main line and had gone on another track to pick up. Looking up suddenly from his work, he saw the car sliding down the main line. He made a run for it, got aboard and attempted to tighten the hand brake. As the Yankee Boomer, M.R.S. newspaper, tells the story: "The car began to pick up speed instead of slowing down. After the first kilometer or so, Skippy began to study the terrain for a possible emergency landing. It didn't look good. More like solid rock, in fact, with the telephone poles going by like a picket fence." Worried about approaching trains, Skippy knew he had seven miles down a heavy grade to Teverola, before he would be able to stop."

With the car out of control, he simply hung on and hollered. At Marcianise, a group of Italian laborers crossing the yards "scattered in panic" as the car breezed by. The operator at this station glimpsed the car and phoned down the line. But the car had already passed the next point. Finally leveling off at Teverola, Conductor Adams "climbed wearily down, went into the yard office, and shakily filled out an accident report . . . 'one car, Caserta to Teverola . . . seven minutes . . . no engine . . . Sgt. Adams, only occupant . . . one to 65 m.p.h. . . . couldn't get it stopped'". It is recorded that the sergeant went on sick call for two days.

The 713th sailed overseas in February, 1943, landed at Casablanca, and went to work. The unit moved up to Italy, later went into France, and settled down to "railroading a la French." And late in March of this year, the outfit was sent into Germany. "Business was good," reports the Boomer, "and the crew pool was turning so fast that many of the men were at the terminal only a few hours before having to go back out again." Sgt. Robert

(*Continued on Page 309*)

Railroad Battalions Will Be Inactivated

Army discloses plans to hold company-sponsored units on reserve status

As the Army is demobilized following the end of the war, technical units, such as railway operating and shop battalions, signal corps units, hospital units and ordnance companies, which were sponsored and manned by civilian institutions will not be disbanded, a War Department announcement reveals, but will be continued on an inactive reserve basis as a part of the post-war military establishment.

The creation of such units early in the war, and even before hostilities began, under the sponsorship of various railroads and of other organizations made possible the orderly conversion of personnel with a high degree of specialized training from peace to war at a time when the requirements of both industry and the armed forces greatly exceeded the availability of men with such skills, the statement explained. Through the recruitment in this way of trained personnel, Army technical units were made available promptly.

Units to Continue—The War Department's post-war policy, it was stated, will be "to preserve affiliated units and sponsored units for possible use in the post-war Army. Continued sponsorship of units by business firms and institutions during the post-war period will not only preserve interest in national security, but will also speed the reactivation of units whenever necessary. Moreover, the historical continuity of these units will be assured if they are activated rather than disbanded. This should materially enhance the pride of the sponsoring organization in its unit. Affiliated units will become a part of the reserves."

The Transportation Corps units affected by this program include the following:

UNIT	AFFILIATED WITH
Headquarters and Hq. Companies	
1st Military Railway Serv.	Chicago, St. Paul, Minneapolis & Omaha
701st Railway Grand Div.	New York Central
703rd Railway Grand Div.	Atlantic Coast Line
704th Railway Grand Div.	Great Northern
705th Railway Grand Div.	Southern Pacific
706th Railway Grand Div.	Pennsylvania
707th Railway Grand Div.	Southern
708th Railway Grand Div.	Baltimore & Ohio
710th Railway Grand Div.	Atchison, Topeka & Santa Fe
Railway Operating Battalions	
712th	Reading
713th	Atchison, Topeka & Santa Fe
714th	Chicago, St. Paul, Minneapolis & Omaha
715th	Illinois Central
716th	Southern Pacific
717th	Pennsylvania
718th	New York Central (Big Four)
719th	Southern Pacific
720th	Chicago & North Western
721st	New York Central
722nd	Seaboard Air Line
723rd	Union Pacific
724th	Pennsylvania
725th	Chicago, Rock Island & Pacific
726th	Wabash
727th	Southern
728th	Louisville & Nashville
729th	New York, New Haven & Hartford
730th	Pennsylvania
732nd	Great Northern
733rd	Central of Georgia
734th	Southern Pacific
735th	Erie
737th	New York Central
740th	Chesapeake & Ohio
741st	Alton
743rd	Illinois Central
744th	Chicago, Milwaukee, St. Paul & Pacific
745th	Chicago, Burlington & Quincy
746th	Missouri-Kansas-Texas
748th	Texas & Pacific
749th	New York, New Haven & Hartford
750th	St. Louis - San Francisco
752nd	Boston & Maine
759th	Missouri Pacific
Railway Shop Battalions	
753rd (Diesel)	New York Central (Big Four)
754th (Steam)	Southern Pacific
755th (Steam)	Norfolk & Western
756th (Steam)	Pennsylvania
757th (Steam)	Chicago, Milwaukee, St. Paul & Pacific
758th (Steam)	Atchison, Topeka & Santa Fe
762nd (Diesel)	American Locomotive Company
763rd (Steam)	Delaware, Lackawanna & Western
764th (Steam)	Boston & Maine
765th	Erie
Additional (Inactive) Railway Operating Battalions	
731st	Union Pacific
736th	New York Central
738th	Chicago Great Western
739th	Lehigh Valley
742nd	Pennsylvania
747th	Atchison, Topeka & Santa Fe
751st	Denver & Rio Grande Western

Military Freight Halted

Acting at the request of the armed forces, the Car Service Division of the Association of American Railroads at 9:25 p. m. on August 14 sent all railroads instructions as to the disposition of Army and Navy freight, thus making effective within a matter of hours after the official announcement of the end of the war a complete embargo on the movement of practically all military freight except foods and fuel.

This action followed the order made effective last week by C. S. D. Embargo 455, by which carriers were prohibited from accepting military shipments of explosives and munitions and were instructed to set aside at the most convenient point all cars of such commodities as were in transit to be held for War Department disposition. This embargo order was amended August 14 to cover the broader restrictions made effective on that date.

Instructions sent the railroads covering Army freight put stop and hold orders into operation on all carload shipments to any Gulf of Mexico or West coast port, or any A. A. F. "in transit depot" in that area, or Prince Rupert, B. C., when such shipments moved under Army orders. The order did not apply to shipments moving on "V-J" permits issued by the Transportation Corps, nor to solid fuel or subsistence material, mainly foods.

Instructions covering Navy freight put stop and hold orders into operation on all carload shipments consigned to any port in the United States or Canada, moving under Office of Defense Transportation permits, with certain exceptions. These exceptions included perishable foods moving under ice or ventilation, cars consigned to Navy advance base depots at Hueneme, Calif., and Lakeview, Wash., and traffic moving under Navy "V-J" permits.

Freight Car Supply Strained by Demand

Kendall contrasts surplus of tank cars to tightness in other classes

Except for a somewhat paradoxical surplus of tank cars, the supply of railroad equipment of all kinds, including all other types of freight cars and passenger cars as well, continues extremely tight, according to the latest monthly report by Warren C. Kendall, chairman of the Car Service Division of the Association of American Railroads, on the "National Transportation Situation." Although this report was issued while negotiations with Japan were still in progress, there was no reason to believe that its analysis of the car supply would be particularly affected by their outcome.

For the first time since April, 1944, Mr. Kendall reported, the number of troops handled in organized groups under so-called main numbers exceeded one million men in July. This was due primarily to the return from Europe of a much larger number of men than the War Department had earlier advised the railroads to prepare for, and secondarily to an acceleration of the program under which combat divisions have been moved to West coast "staging areas" for embarkation to the Pacific theater.

While the original plan contemplated the movement of two divisions west in October, for example, these particular divisions more recently were listed for movement to the West coast during the third week of August, he explained.

Getting Them Home.—While "redeployment" of Navy forces has not reached an appreciable volume so far, Mr. Kendall went on to say, the railroads will be called on in a very short time to handle the return of men in this service under a program set up on a basis somewhat similar to that used by the Army.

Turning to the freight car situation, the C.S.D. chairman was able to report that the tank car supply remains "easy, with continued lessening demands for cars" in practically all classes of traffic. Not only is there lighter loading to both the Atlantic and Pacific coasts, he said, but surplus tank cars are being placed in storage at various points throughout the country, there being about 20,000 tank cars out of service when the report was prepared. This condition results largely from a diminishing rail movement of petroleum and its products, in which some 77 per cent of all tank cars have been engaged. Since June, total tank car shipments of oil have declined steadily, and the East coast movement during August is not expected to average more than 275,000 barrels a day, which requires a daily movement of about 1,375 tank cars. The westbound oil movement also was expected to decrease, even when Mr. Kendall was writing, and he estimated the demand for tank cars for this traffic during the last half of August at

about 375 cars per day, as compared to 515 cars per day in July.

Reefer Traffic Heavy.—In contrast to the tank car situation, Mr. Kendall stated that loadings of refrigerator cars for the past seven weeks have exceeded those for the corresponding weeks of 1944, and loadings continue heavy. However, the car supply has been adequate in all areas except in northern and central California, where shortages have been reported since the latter part of July. Refrigerator car loadings in the country as a whole totaled 229,884 cars in the period from June 9 to July 28, an increase of 14,088 cars, or 6.6 per cent, over the corresponding period last year.

Potatoes are moving in greater volume than last year from the early potato producing states, he said, and the movement has also started in volume from Colorado, New Jersey and Long Island. The tendency on the part of some of the shippers in the West and Pacific Northwest to ship potatoes earlier than usual has increased the difficulty of supplying suitable cars. The peach movement also has shown a decided increase over 1944, the shipments for the same period of this crop being 22,817 cars this year as against 11,671. However, with a completion of the movement of this record crop from the Southeast, an additional flow of empty cars has been directed west. But the refrigerator car supply is "badly scattered" about the country, as a result of the movement in June of a record-breaking 95,631 carloads of fresh fruits and vegetables, so it has been impossible to build up a bank of refrigerator cars for prospective loading in the heavy producing areas.

The demand for heavily insulated refrigerator cars has been active on account of heavy frozen foods loading, Mr. Kendall continued, but there is a surplus of meat cars resulting from reduced loadings of fresh meats. Many of these cars have been released by packers for use in place of standard refrigerator and box cars during the present emergency.

Winter Wheat Over Hump.—With the heavy movement of harvest grains now practically over in the Southwest, empty box cars are being moved to Eastern and Southern territories to aid railroads in those areas in meeting their heavy requirements for such equipment, it was explained. The demand for box cars continues heavy in all sections, particularly for high grade cars suitable for the shipment of grain, foodstuffs and munitions. The supply of rough and merchandise box cars is generally adequate, except that it is described as "tight" in the East and South. Harvesting of the winter wheat crop is now about complete, and the accompanying peak grain movement is past, and Mr. Kendall was able to announce that the season's bumper winter wheat crop was handled "successfully, and with only minor delay or congestion." Peak loadings of grain in the Northwest are expected in about 30 days, with favorable weather. There is no likelihood of a let-up in demands for box cars during the rest of the year, however.

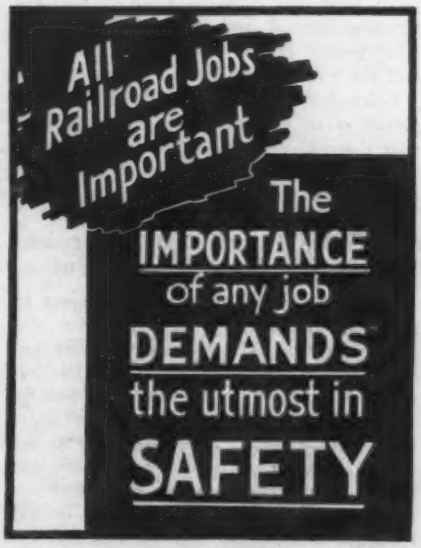
The supply of stock cars, both single and double deck, is now tight, Mr. Kendall went on to say, as a result of heavy demands in the West, though requirements have been met so far with only minor delay. All available stock cars on eastern and southern roads are being moved to the principal livestock loading carriers in the West, and such equipment is being withdrawn from general service and restricted to livestock loading only.

Not much change since July is noted in the open top car situation, with demands continuing heavy and the supply tight at all times. Anticipated heavier coal production will put increased strain on an already inadequate supply of coal cars, and particular attention to their prompt movement was called for. The East has been drained of gondolas by the increased movement of this type of equipment to the Pacific coast, and "considerable difficulty" is being experienced in furnishing equipment of this type. The supply is particularly thin in the vicinity of New York, Philadelphia, Baltimore and Norfolk, where a great amount of battle equipment being returned from Europe has to be handled on short notice, in order to avoid delaying ships, while normal industrial loadings continue unabated.

Open Tops in Demand.—Flat cars are in particular demand east of Chicago and St. Louis, since the situation in gondolas is repeated to a large degree in this class of equipment. While the demand for heavy duty flats continues heavy, requirements generally have been met satisfactorily. Covered hoppers, on the other hand, have not been available to meet all requests for such cars, and the demand continues in excess of the supply. The "utmost vigilance," the C. S. D. chairman said, is required if the heavy demand for all types of open top cars is to be satisfied during the next several months.

While there are "four or five spots" where l. c. l. traffic is heavy and a slight backlog has developed at irregular intervals, freight house operations all over the country are generally on a current basis. Shippers whose volume of l. c. l. is sufficient to justify direct loading will avoid delays, even under the best conditions, it was pointed out, if they will study the possibility of loading to direct destinations or distant transfers, so by-passing intermediate transfer points. The possibilities in this connection were emphasized for shipments to western points, for which minimum loading requirements under the Office of Defense Transportation's General Order 1 have been relaxed under certain conditions.

* * *



Poster No. 264, September Installment of the "All the Year-Every Year Safety Program," Currently Being Distributed by the Committee on Education, Safety Section, A. A. R.

During July the average daily unloading of export and coastal freight at United States ports was 5,918 cars, a substantial decline from June, which in turn was less than May, Mr. Kendall pointed out. This was accounted for by a drop in exports through North Atlantic ports. Exports through Gulf of Mexico and South Atlantic ports increased 73 per cent, while Pacific ports showed a 44 per cent increase.

North Western Railroader Is Awarded Purple Heart

First Lt. James R. Holmes, of Chicago, a former North Western engineer, and now road foreman of engines with the 732nd Railway Operating Battalion, has been awarded the Purple Heart, according to the "Yankee Boomer," M. R. S. newspaper.

It was on the initial test train into Germany, following the Third Army's urgent call for supplies, that Lt. Holmes was wounded. As the account goes, "Enemy artillery laid down a barrage on all sides, but the Diesel engine, pushing three cars of sand (to explode all mines undetected by demolition squads), plowed ahead." Later when the train stopped for water, Lt. Holmes was shot and wounded by a sniper. Refusing medical aid, the lieutenant continued to supervise the run from the cab.

As a result of the success of the mission, the entire 732nd won the commendation of Brig. Gen. Walter J. Muller, assistant chief of staff, G-4 United States Third Army.

General Gray Dedicates New M. R. S. Chapel at Brussels

More than 70 officers and men of the 2nd Military Railway Service, and a party from General Headquarters, headed by Brig. Gen. Carl R. Gray, Jr., M.R.S. director general, attended the dedication of a new chapel for troops of the 2nd M.R.S., at a recent dedication in Brussels, Belgium. Said to be "handsomely appointed," the chapel holds both Roman Catholic and Protestant services.

Brig. Gen. Clarence L. Burpee, commander of the 2nd M.R.S., who was also at the ceremony, reminded the gathering that it was largely through General Gray's insistence that military railway units had chaplains and facilities for religious worship.

Following his introduction by General Burpee, General Gray dedicated the chapel "to the greater glory of God, and to the use of the officers and men of the 2nd M.R.S. That you wanted to build this

chapel pleases me very much. That you built it so well delights me." He concluded: "In using these facilities you have provided, I know that you will derive great benefit, and the pleasure that comes from having done a thing well."

Army railroaders now worship in a range of "sanctuaries"—in chapel cars, in a variety of buildings, and in fine local churches. And said to be the "epitome of all is stately St. Paul's church in Strasbourg," where the M.R.S. chaplain conducts services for both soldiers and civilians.

Fourth Quarter Steel Allocations

Even though predictions that the Controlled Materials Plan might not survive until the end of the year, its scheduled termination date, were prevalent before negotiations with Japan got under way last week, the War Production Board has continued to allot materials under that plan to industries qualifying for preferred treatment, and the Office of Defense Transportation on August 11 made public the fourth quarter steel allocations for the railroads and other agencies of domestic transportation.

In contrast to the situation a few months ago, the O. D. T.'s statement began with the disclosure that all O. D. T. requests for steel for the fourth quarter were met in full, except for replacement rail and track accessories and for trucks, trailers and related products. Total allocations of carbon steel for transportation equipment for the quarter were 1,470,485 tons, or 89 per cent of the 1,648,623 tons applied for.

The first quarterly allotment of critical materials under this plan covered the second quarter of 1943, and this eleventh allotment, covering the last quarter of this year, is expected to be the final one, as the pre-V-J Day reconversion program of the W. P. B. contemplated termination of C. M. P. operations at the end of the year. During this period, the O. D. T. has been allotted over 17,000,000 tons of steel for all purposes, including maintenance, repair and operating supplies, against stated requirements of some 21,000,000 tons, the largest submitted by any non-military agency of the government, it was explained.

Carbon steel allotments for the fourth quarter of 1945 meet in full the stated requirements for railroad equipment submitted by the O. D. T., providing 41,500 tons for locomotives, 240,000 tons for freight cars, 6,100 tons for passenger cars, 3,000 tons for railway marine equipment, and 3,635 tons to complete third quarter allotments for troop sleepers and kitchen cars. Production of these troop cars will be under way in September, the O. D. T. said, and they are scheduled to be completed by the end of the year.

Allotments were made of alloy steel, copper and aluminum in line with the provision of carbon steel for railway equipment.

As in the past, the O. D. T. asked that the full capacity of the rolling mills for controlled cool rail be allotted to domestic transportation in the final quarter of this year. This would amount to 600,000 tons of rail. In addition, 288,000 tons of track accessories were applied for. The W. P. B.'s approved program, which took into consideration "other essential requirements" and industrial and military needs, it was said, assigned 518,000 tons of rail and 249,000 tons of track accessories to the railroads, while the local transit lines' requirements for 11,000 tons of rail and 3,000 tons of track accessories were met in full.

The requests made by O. D. T. for water transport were met in full, the allocation being 28,000 tons. While allotments for trucks and trailers were cut about 20 per cent below the stated requirement, it was indicated that supplementary allotments would be made later. In addition to the 191,562 tons thus provided for property-carrying highway equipment, the W. P. B. allotted 19,000 tons for buses and bus bodies and 1,250 tons for street cars and trolley coaches.

A General, a Movie Star and 200 Kids Made Happy

When the 724th Railway Operating Battalion recently donated more than 900 candy bars to some 200 children of Creil, France, there was widespread appreciation. Director General Carl R. Gray, Jr., wrote a letter of commendation to Lt. Col. James D. Shea, commanding officer of the 724th. Actress Madeleine Carroll expressed, in writing, her thanks and a great many of the children tasted their first chocolate in four years.

Said Miss Carroll, whose personal interest in French orphans is well known, "My small word of thanks will never be able to express the gratitude of the 200 little war victims of Creil who ate with such delight your generous gift of candy yesterday . . . I told the children that the candy was sent to them from railroad people like their own fathers and brothers at Creil and so they felt, somehow, that you and they were all part of one big railroad family."

General Gray then commented: "To her deep appreciation I add my commendation upon the generous attitude of your men, and want to indicate that I believe it will go a long way towards creating and cementing cordial and delightfully friendly relationships between the American Army and the French population."

Colonel Shea, in passing along these messages to the unit, expressed approval that their kindness had been "volunteered willingly and without thought of remuneration or reward."

See Some Benefits to Railroads in Army Procurement Cut

While the War Department's August 15 announcement that its program for the procurement of munitions and supplies had been cut immediately upon official announcement of the surrender of Japan by some $23,500,000,000 per year, or from $2,400,000,000 a month to $435,000,000 per month, which signified a terrific reduction in industrial output for military purposes and a corresponding reduction in freight traffic, it was evident that there were some favorable aspects to the situation from the point of view of the railroads.

One point in the curtailment program disclosed by the Army was its complete halt of production for its use of locomotives and railroad cars. Such equipment was one of four categories of supplies where a 100 per cent cut in requirements was indicated. The exact amount of equipment affected by this action was not immediately disclosed. Railroad maintenance and communications needs can be more readily filled hereafter, it also was indicated, as a result of the Army's 100 per cent cut in its procurement of telephone and telegraph equipment and a similar cut in construction equipment.

Paul V. McNutt, chairman of the War Manpower Commission, in an August 15 review of the prospective rise in unemployment in the United States that is expected to develop within the next four months, called attention to the railroads as one industry that is in a position to absorb some of this available manpower, as it has been desperately in need of additional men.

Because of their deferred labor demands, he said, "railroads are expected to employ an additional 25,000 in the next two months, after which their demand is expected to level off. It is anticipated that even a substantial drop in traffic two months hence will not bring more than the usual seasonal decline in employment. Hours are now very long, and the 71,000 Mexicans employed on track work might continue until their contracts expire, leave in the fall, and not be replaced by United States workers until spring."

Bronze Star Medals for Five Army Railroaders

Brig. Gen. Clarence L. Burpee, commander of the 2nd M. R. S., recently presented Bronze Star Medals to several officers and enlisted men in 2nd M. R. S. headquarters. Several recipients were railroaders, and one had been with the Interstate Commerce Commission.

Col. George J. Mulick, of Omaha, Neb., assistant to general manager in 2nd Hq., and once general superintendent on the Union Pacific at Omaha, was cited for "his aid in coordinating and planning the efforts of M. R. S. units both before and after the invasion of France, culminating in the establishment and maintenance of reliable supply lines from all major continental ports to front line depots."

Col. Fay L. King, of Sabula, Ia., and head of the 2nd M. R. S. equipment section, was district master mechanic for the Chicago, Milwaukee, St. Paul & Pacific before entering the service. Colonel King won his citation for "services in connection with special installations in L. S. T.'s for ferrying railway equipment from England to France, and for his supervision and planning of repair shops and roundhouses at Cherbourg."

Col. Everrett H. Qualls, of Arlington, Va., executive officer in 2nd Hq., was once assistant director in the Bureau of Motor Carriers, Interstate Commerce Commission. Colonel Qualls was cited for "assistance in advance planning of M. R. S. operations prior to the invasion, and in expediting materiel and supplies to the armies by organizing and coordinating the efforts of M. R. S. units and other T. C. services."

A former division superintendent from the Northern Pacific in Montana, Lt. Col. George N. Slade, of St. Paul, Minn., was

cited for his work as general superintendent of transportation, 2nd M. R. S. It was said of him he displayed "outstanding initiative and foresight in coordinating and directing movement of supplies by rail from Cherbourg port to forward supply dumps during the invasion."

Colonel William T. Elmes, of Beaver Falls, Pa., now serving as assistant general manager, engineering, at 2nd M. R. S., was a former division engineer on the New York Central, at Pittsburgh. He won his citation for being "active in planning and directing rehabilitation of continental rail lines."

Maj. Everett W. Hargrave, of St. Louis, superintendent of car service, 2nd M. R. S., was cited for "outstanding service as rail liaison officer" and for his work in the distribution of railway cars for the invasion. Major Hargrave had been assistant general superintendent of transporation for the Missouri Pacific, at Houston, Tex.

I.C.C. Service Orders

Provisions of Interstate Commerce Commission Service Order No. 345, limiting the icing of carload shipments of potatoes, have been modified by the revised version of that order, effective August 10 through October 20, unless otherwise directed. The revision prohibits bunker preicing and restricts bunker icing and reicing to 8,000 lb. maximum, and is applicable to potatoes from all origins west of the Mississippi river. Reicing of cars originating in Idaho, Utah and Arizona and west thereof is limited to once west of the Mississippi rive and a second and final reicing in territory east of that river. Only one reicing is permitted on shipments originating at other points west of the Mississippi. Reicing at final destination is prohibited.

General Permit No. 1 under Revised 345, however, permits a second reicing of potatoes originating in or west of Idaho, Utah or Arizona when consigned to points in Louisiana or in Texas east of a line formed by extending southward the eastern boundary of the Texas panhandle. This permit is effective from August 10 through September 14.

Service Order No. 346, restricting refrigeration of fresh or green vegetables, also has been modified by Revised Service Order No. 346, effective August 10 through October 20. It applies to such shipments from points in or west of Montana, Wyoming, Colorado, or New Mexico or the extreme western end of Texas. It prohibits bunker icing of top iced cars of such commodities, and allows one retop icing west of the Mississippi river and one east of it, such reicing being limited to 8,000 lb. Certain shipments originating on the Pacific Electric, Southern Pacific and Union Pacific are excepted from the terms of the revised order.

General Permit No. 1 under Service Order No. 343, which order prohibits icing or reicing of certain commodities, including dried or evaporated fruit, originating in certain western states, permits carriers to disregard these requirements where shipper certifies that dried or evaporated fruit has been stored under refrigeration and is consigned to plants making strained baby foods.

By Amendment No. 33 to Service Order No. 80, the commission named F. S. Keiser as its general grain agent, with headquarters at Chicago, in charge of grain transportation for the purposes of that order.

Special Car Order No. 37 of the Car Service Division of the Association of American Railroads, which directed prompt return of ventilated box cars to southeastern railroads, and limited their loading to perishable freight in that territory, has been canceled, effective August 13.

I. C. C. Service Orders Nos. 120 and 121, applying to the delivery of coal and issued at the time of "work stoppages" at the mines in 1943, now have been vacated and set aside, after having been suspended since 1943. The commission also has set aside its Service Order No. 109, which required the Louisiana & Arkansas to deliver petroleum and products to the Illinois Central at Baton Rouge, La.

"Skippy" Adams' Ride a Legend of 713th

(*Continued from page 305*)

N. Kilgour, of Stockton, Cal., recalls that when he walked into the crew dispatcher's office to register in from his run, he was met with a call to go out in two hours. It was on April 11 that six switching crews, led by Sgt. Louis Pezely, of Salt Lake City, Utah, crossed the Rhine and began switching and clearing equipment in the vicinity of Darmstadt.

Lt. Col. Charles D. Notgrass, of the Santa Fe, led the 713th overseas but was forced to return to the States because of illness. Lt. Col. (then major) Ernest E. Foulks, of Winslow, Ariz., then took over. Colonel Foulks was a former superintendent of the Albuquerque division of the Santa Fe.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since August 3, and which are of interest to railways:

Lumber—Lumber cannot be obtained on MRO ratings for use in construction forms, with some minor exceptions, the W. P. B. has said. The restriction, applicable to all form lumber in construction work except that having ratings granted for minor capital and plant additions by CMP regulations "P" and "U" orders, is established by Amendment No. 1 to the lumber control order No. L-335. It is designed to prevent the use of priorities assistance in obtaining form lumber in construction permitted without priorities assistance.

Tin—Highlighting the critical tin shortage, the W. P. B. has imposed new restrictions on uses and permissive inventories. Direction 2 to M-43 stipulates that producers of all tin alloys must limit their use of the metal in any calendar quarter to the amount of their respective quotas. Formerly, a producer could exceed his allocation if his supply on hand permitted it. Now, no matter how much tin a manufacturer may have on hand, he is only permitted to use the metal to the extent of his quarterly quota.

These restrictions apply to producers of: solder, Babbit metal, brass, bronze, copper base alloy ingots and all other alloys containing tin.

The direction also provides that users of alloys containing tin, other than copper base controlled alloys, are not permitted to accept deliveries of tin alloys that would raise their inventories in excess of a 30 days' supply. Copper base alloy controlled material users are allowed to accept deliveries up to a 60-day inventory.

Prices

Bituminous Coal—Producers' ceiling prices for bituminous coal have been increased an average of 3.47 cents per ton to remove impediments to production, by Amendments No. 146 and 147 to MPR-120 effective August 3.

The increases, which affect 13 of the country's 22 districts, are required to provide each district with the standard operating margin of either 15 cents a ton or 1942 margin, whichever is greater. This standard was established in 1943 by the Office of Economic Stabilization.

Cotton Rope and Twine—The lowest prices properly negotiated by new producers of cotton rope and twine between November 23, 1944, and February 17, 1945, have been established as their ceiling prices O. P. A. said. Amendment No. 8 to supplementary regulation No. 14e is effective August 15.

Lime—An increase of $1.20 per net ton in northeastern producers' ceiling prices for building, chemical and industrial lime, excluding agricultural lime, is provided in Amendment 1 to Order 1 under MPR-592, effective August 13. The increase applies to all sales in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut and eastern New York.

Prefabricated Buildings—Producers of prefabricated dwellings have been given an interim pricing formula that will permit a greater amount of automatic pricing under Order 756 under Section 1449.3(b) under the GMPR and became effective August 13. The formula affects two classes of prefabricators who constitute virtually the entire field of prefabricated dwelling manufacturers, O. P. A. said. They are: established producers who offer new types of structure for sale, and new producers entering the field for the first time. Both classes formerly had to apply to O. P. A. for a price in most cases.

In computing ceilings both classes will take as a cost base the March, 1942 prices of the materials and labor they are using today, O. P. A. said. Thus 1945 ceilings will be automatically adjusted to changes since 1942 in kinds of materials used, and to changed labor productivity. Since the pricing method is based on material prices and labor rates that existed in March 1942, resulting ceiling prices will be in line with 1942 prices for comparable units, O. P. A. said.

Established producers will apply to their direct costs, computed on the basis of March 1942 rates, their average percentage margin realized on their entire prefabrication operations during the calendar or fiscal year 1942.

A separate regulation governing sales of these dwellings will be issued when sufficient cost and related data are available, O. P. A. said, and today's action is a stop-gap measure to allow prompt pricing of early offerings.

Roofing Felt—Manufacturers' ceilings for dry roofing felt have been increased $7 a ton by Amendment 2 to RMPR-369, effective August 8.

The new ceilings are $59 a ton for felt weighing less than 60 pounds per 480 sq. ft., and $63 a ton for felt above that weight. The action does not allow any increases in the ceilings for finished roofing products that are made from dry roofing felt.

Southern Pine Lumber—Cancellation of an increase of $4 per M f. b. m. in the carload ceiling prices for all grades of shortleaf 2 in. by 4 in. Southern pine lumber in lengths of 10 ft. or longer has been provided by Amendment No. 11 to second revised MPR No. 19 effective August 15.

GENERAL NEWS

Georgia Gives Bench Bill of "Particulars"

Responds to Supreme Court's order to specify injuries in "freight-rate-fix"

This week the state of Georgia filed with the Supreme Court of the United States what Governor Arnall termed a bill of particulars in response to the court's direction that it make more specific its allegations of injury suffered by its citizens as a result of the "conspiracy" of the railroads to fix freight rates, the basis of its original suit in that court. As noted in *Railway Age* of June 23, page 1119, the twenty defendant carriers have until October 1 to answer the state's bill of complaint.

The essence of the state's reply was that the various rate-making bureaus and committees and the Association of American Railroads—described as the "supreme authority in the hierarchy of private rate-fixing agencies" because it allegedly supervises and coordinates their activities—constitute a "private government" established for the railroad industry. The state's complaint, it said, has reference to all rates and proposed rates, including rail, rail-water, export, interterritorial, joint, intra-territorial, commodity, or others made through the machinery described in the complaint.

The "illegal combination" of rate-making bureaus and committees, the state asserted, dominates and controls all freight rates by preventing individual carriers from initiating competitive rates in accordance with the Interstate Commerce Act. "In pursuance of this unlawful purpose," it went on to say, the defendant railroads have engaged in a concert of action among themselves to "coerce" and "restrain" any individual carrier from 13 specified acts in connection with rate-making which allegedly it should be free to perform under the law.

The specified acts include the following: (1) Initiating or modifying rates without first submitting them to the "private rate-fixing agencies" concerned; (2) filing rate changes with the Interstate Commerce Commission without first obtaining the consent of the rate bureaus; (3) filing such changes without the consent of the rate bureau's chairman, "a mere employee"; (4) filing changes without obtaining bureau chairmen's approval of the effective date; (5) initiating changes, even if the Southern territory rate bureaus agree and connecting carriers in destination territory agree, if chairmen of the connecting carriers' rate-making agencies object; (6) making such changes, even if all parties involved are agreed, if other jurisdictions, not directly concerned, object; (7) making rate changes if one or more carriers in Official or Western territory, not directly concerned in the rate, contends that publication will be harmful to it; (8) asking the I. C. C. to suspend a rate published in Official or Western territory which would create a situation harmful to Georgia's industry or people; (9) putting into effect in Georgia I. C. C. orders "equitable to Georgia"; (10) considering proposed rates, the A. A. R. allegedly having usurped the prerogatives of individual carriers in this respect; (11) initiating rates, this power assertedly having been transferred, "in violation of the Interstate Commerce Act," from the individual carrier to other members of the conspiracy; (12) filing rates without first obtaining the consent of non-rail competitive forms of transportation that are also members of the rate-making bureaus; and (13) making rate changes if the A. A. R. board of directors disapproves.

Railroads Win Top Rating in Transport Ads

The "continuing studies of newspaper reading" being conducted by the Advertising Research Foundation, Inc., 11 West 42nd street, New York 18, reveal that advertisements by four railroads stand at the top of the list of the ten best transportation advertisements appearing in the 72 newspapers studied over a period from 1939 to the middle of 1944. The advertisements were judged according to their percentage of readership by men and women, and the ten best transportation advertisements were rated as follows:

Advertisement	Per Cent Read By Men	By Women
Southern Ry.	48	45
N. Y. Central R.R.	48	41
Lackawanna R.R.	39	45
Burlington R.R.	21	20
Greyhound Lines	11	21
Greyhound Lines	19	17
Northwest Airlines	18	8
Western Railway Assn.	17	15
Great White Fleet	15	16
American Airlines	15	13

Of the various categories of national advertising studied, the "best" automotive, food, medical and tobacco advertisements achieved higher percentages of readership than the top transportation advertisement—while no advertisement in the following categories attained such high readership as the top-ranking railroad advertisement: alcoholic beverages, "soft" drinks, soaps and cleansers, household appliances, and toilet articles. The three railroad advertisements actually received more readership among women than the top advertisement of perfumes and toilet soap.

The Southern's advertisement which received the highest rating in the transportation category showed a railroad employee homeward bound saying, "Tired tonight and proud of it."

Questions B. & O.-R. F. C. Relations

Montana Democrat alleges "certain facts" which need "thorough investigation"

In a letter to John W. Snyder, then federal loan administrator, which was made public last week, Senator Wheeler, Democrat of Montana, chairman of the committee on interstate commerce, recited "certain facts" concerning transactions between the Baltimore & Ohio and the Reconstruction Finance Corporation which, he said, "if true, indicate the need for a thorough investigation."

The "facts," the truth of which the senator said should be determined, were enumerated in his letter in nine paragraphs, an outline of which follows:

1. Out of about $85 million loaned the B. & O. by the R. F. C. in the past 12 years, at least $82 million remains unpaid, the largest amount owed that agency by any railroad.

2. The so-called 1938 debt adjustment plan, approved by the court, extended the life of the B. & O.'s loans from the R. F. C. to 1944.

3. Appearing as counsel for the R. F. C., Cassius M. Clay supported the 1938 plan in court and accepted the court's findings, i.e., that the railroad's inability to meet its debts was expected to be temporary only, that further reorganization was not likely to be needed, and that adequate provision was made in the plan for future financing.

4. This plan was approved by a 3-judge federal court in 1939, and it became effective.

5. Within three years after the plan became effective, Messrs. Stewart McDonald, Roy B. White, Russell L. Snodgrass, Cassius M. Clay and Frederick Baukhages became "the chief executive, legal and financial officers of the railroad, although—except for Mr. White—none of these men had previously been connected in official positions with the railroad, and all of them, I am informed, had been connected in official positions with the R. F. C. and associated agencies."

6. When, in 1942, legislation was under consideration to reenact chapter XV of the Bankruptcy Act, under which the 1938 plan was consummated, Mr. Snodgrass appeared before the Senate committee on behalf of the R. F. C., urging reenactment, without disclosing that, previous to this appearance, he had accepted a position with the B. & O. as "vice-president in charge of finances." No intimation was given the committee that a further adjustment of the B. & O.'s debt, taking advantage of the provisions of chapter XV, would be re-

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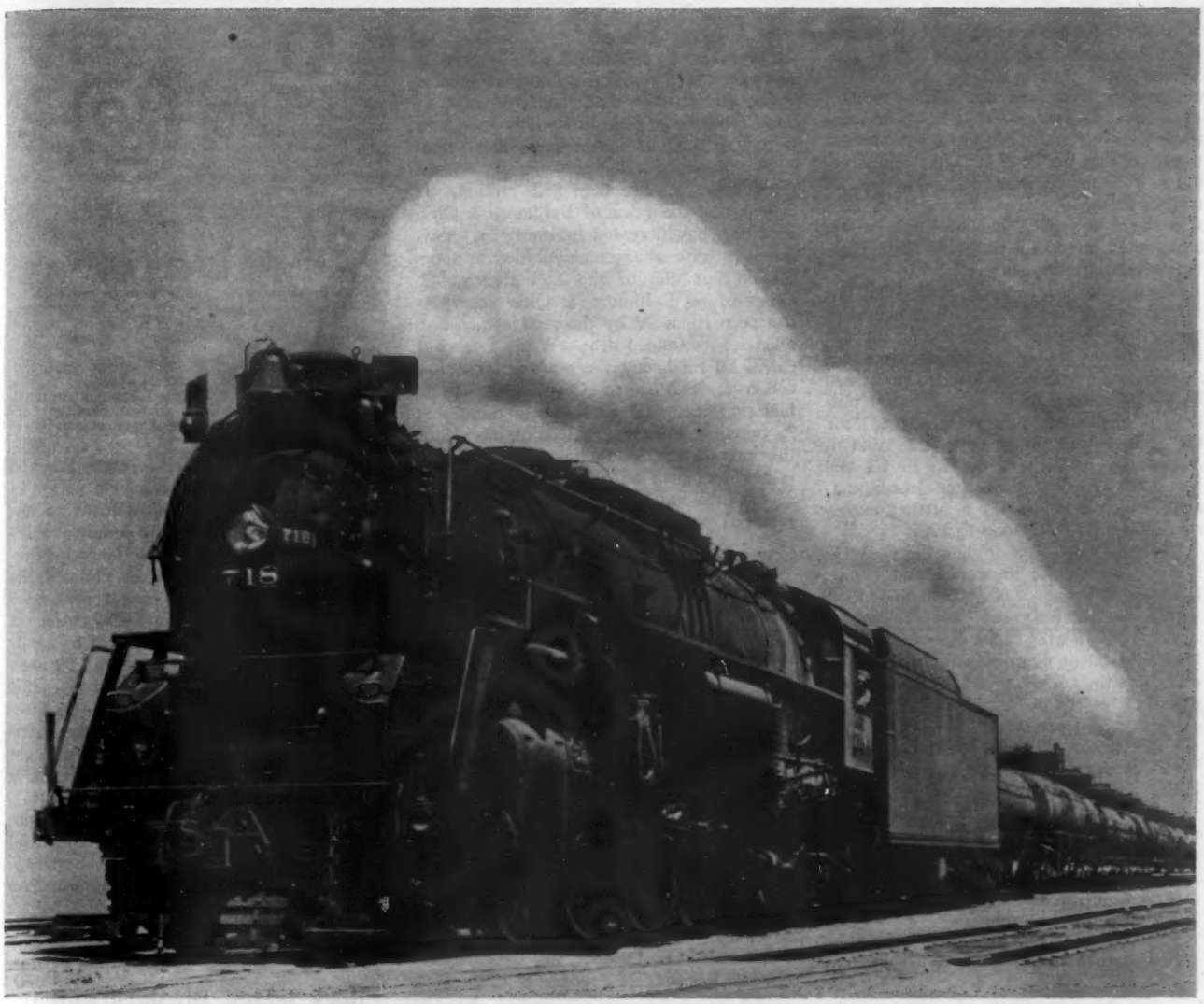

Nickel Plate 2-8-4 built by Lima

Today's Speed will be SLOW tomorrow!

AMERICAN business calls continuously for faster and faster deliveries. To meet this insistent demand, the railroads require motive power capable of hauling heavier trains at higher sustained speeds.

Lima is meeting this need by building steam locomotives that move heavy freight traffic at passenger train speed, with maximum efficiency and economy.

LIMA LOCOMOTIVE WORKS INCORPORATED, LIMA, OHIO

quired subsequently, even though the chairman of the road's executive committee, Mr. McDonald, was present. President Truman was then a member of the committee which received this testimony, but, according to Senator Wheeler, "I did not think and I am sure President Truman did not think that the B. & O., after representing in 1939 that it would not be in need of further financial reorganization if its 1938 plan were approved, would again be in bankruptcy and petitioning for further relief under the same statute."

7. Although the B. & O., since 1939, has earned more than $100 million net after taxes, has profited to the extent of $35 million from purchase of its own securities at a discount, and holds investments which have appreciated in value some $80 million, it has again, this year, alleged "for the second time in seven years" that it cannot pay its debt to the R. F. C., and has asked approval of another debt adjustment which provides for a further extension of the R. F. C. loan to 1965.

8. "Some time after joining the B. & O., Messrs. McDonald, Snodgrass and White, I am told, bought 3,000, 2,200 and 1,100 shares, respectively of the company's stocks." Following announcement of the 1944 adjustment plan, of which Mr. Snodgrass was the author, the B. & O.'s common stock increased in price on the market more than 200 per cent.

9. While the R. F. C. has gone unpaid, "Wall Street speculators have made a huge killing in the B. & O. stocks," and there has been "a frenzied speculation in the company's bonds," with the result that the volume of transactions in B. & O. securities in "the last six to eight months is among the greatest for any one company on the New York Stock Exchange."

This "huge speculative orgy," the senator continued, has been made possible by the "failure" of the R. F. C. to insist on repayment to the maximum possible extent of the B. & O.'s debt, "out of the company's huge net profits." Unless it can find a purchaser for the collateral trust bonds which it will hold under the new plan, the R. F. C. will have to wait to 1965 to collect this debt, he said, "while the speculators reap quick and tremendous profits."

Concluding, Senator Wheeler remarked that he was "unable to understand why the R. F. C. loans are permitted to remain unpaid," and that it "seems to me rather shocking" that R. F. C. officials concerned with the transaction should soon afterwards become officers and directors of the debtor. Government loans should be "handled," he declared, so there would be no suspicion, "justified or not, that they are being used as a means of obtaining employment in or control of large privately-owned corporations for the benefit of former R. F. C. officials." It was "such practices" that President Truman and other senators "joined with me in roundly condemning," he said finally.

R. B. White, president of the Baltimore & Ohio, in reply to Senator Wheeler's charges has asked for an investigation which he said would correct "the serious charges made or implied" in the senator's letter "involving the management of the railroad."

Mr. White said that "the suspicions you apparently have of some wrongdoing because some of the officers of the B. & O. were formerly connected with the R. F. C. are unfounded" and added that he himself had never been connected with that agency.

He said further that, "since I came to the Baltimore & Ohio in 1941 as president, it has reduced its indebtedness more than $100 million, thereby reducing its annual fixed charges more than $5.5 million. It is true that the value of Baltimore & Ohio securities has increased substantially. This is not because of any manipulation or speculation but due to the fact that public appraisal of Baltimore & Ohio securities has been enhanced by the retirement of so much of its funded debt. While I am not called on to defend the action of the Reconstruction Finance Corporation, I do feel that it should be borne in mind that its function is not merely lending money for the interest it collects thereon but that it is a government agency designed, in part, at least to aid railroads in solving their financial problems."

Emergency Board Appointed

Chairman H. H. Schwartz of the National Railway Labor Panel has appointed an emergency board to investigate a dispute between the Delaware, Lackawanna & Western and certain of its employees represented by the Utility Workers Organizing Committee, C. I. O. The board, composed of three members of the panel, is scheduled to commence its investigation at New York August 20.

B. of L. F. & E. Strike Called for Aug. 24 on Illinois Central

Firemen, hostlers and hostler helpers on the Illinois Central System have been ordered to go out on strike at 12:01 a. m. August 24, a spokesman for the Brotherhood of Locomotive Firemen & Enginemen announced in Chicago on August 15. The issue is a jurisdictional dispute with the Brotherhood of Locomotive Engineers, and the B. of L. F. & E. strike has been called following an "emergency board" decision which was not to the taste of the B. of L. F. & E.

W. P. B. Reconversion Plans Are Outlined by Krug

The War Production Board's detailed plan for reconversion of industry to civilian production was made public by Chairman J. A. Krug following President Truman's announcement of Japan's unconditional surrender.

In effect the plan calls for revocation of all possible controls, only those being retained which will be necessary "to prevent industrial dislocation and bottlenecks which might prove harmful to reemployment and to assure stabilization." At the same time the report stressed the fact that even the controls which are being retained, are only a temporary measure and will be revoked "as soon as possible."

The plan was outlined as follows:

1. "All but a handful" of W.P.B. orders will be canceled within a few weeks.
2. Release of a "huge industrial building program" through a plan to relax industrial construction controls. This plan, designed to absorb the manpower and materials freed by military cutbacks, is already in effect and additional relaxation will be considered within thirty days.
3. Remove ceilings on production of automobiles and other consumers durable goods. These important industries may now move forward with all-out production programs.
4. Orders controlling materials that are still in short supply, especially tin, crude rubber, textiles, and lumber, will be retained until shortages ease or until there is no longer any danger of a scramble.
5. Inventory controls will be retained until the danger of hoarding, pre-emptive buying and stockpiling "by the few at the expense of the many" are over.
6. Preferential protection of small business ($50,000 or less per quarter) will remain in effect until the effects of cutbacks can be appraised.
7. The W.P.B. will retain its powers for breaking bottlenecks or giving protection where needed to military or highly essential civilian or export needs. "These powers will be used only where necessary and business should not rely on priorities help for conducting its normal activities."
8. The W.P.B. will "take vigorous action" to expand production of materials which are in short supply to meet civilian demands and will work with other agencies whose operations are of equal importance to the rapid expansion of such production.

"In some cases, orderly relaxation and revocation must be spread over a period of weeks or even a few months to avoid unnecessary dislocation and to assure stabilization," Mr. Krug said. "In some instances, the national interest dictates the exercise of control for a longer period.

"Practically all materials and resources needed by American industry will be available in abundance. American business men, managers and workers must meet this challenge and use their initiatives and resourcefulness for making the thousands and thousands of decisions necessary to get American production rolling again on a peacetime basis.

"The government can help but the initiative must come from the people. Priorities which were designed to allocate short supplies and scarce materials will not solve the problem of making prompt and effective use of the materials that have now become plentiful."

Rock Island Displays Roller-Bearing Box Car

On August 15 the Chicago, Rock Island & Pacific made a one-day display of its first Timken roller-bearing equipped, lightweight box car at the Union station in St. Louis, Mo. The car, which was designed by the Reynolds Metals Company and built by the Mt. Vernon Car Company, is constructed of the same alloy from which B-29 planes are made, and with the roller bearings and specially designed trucks, is capable of being operated at unusually high speeds. It was also said that the use of roller bearings on the axles makes possible major reduction in starting resistance.

Conn Reveals Origin of Smear Attack on T. A. A.

In a review of the history of the Transportation Association of America, just published, Donald D. Conn, founder and executive vice-president of the association, lashes out at "false representations" in the Senate Interstate Commerce Committee report of its investigation of "railroad organizations" (1936-1938), which are the basis for charges by propagandists for highway and air transport that the association is a "railroad front." He denies the charges and explains how the Senate committee made damaging statements about the association without having given

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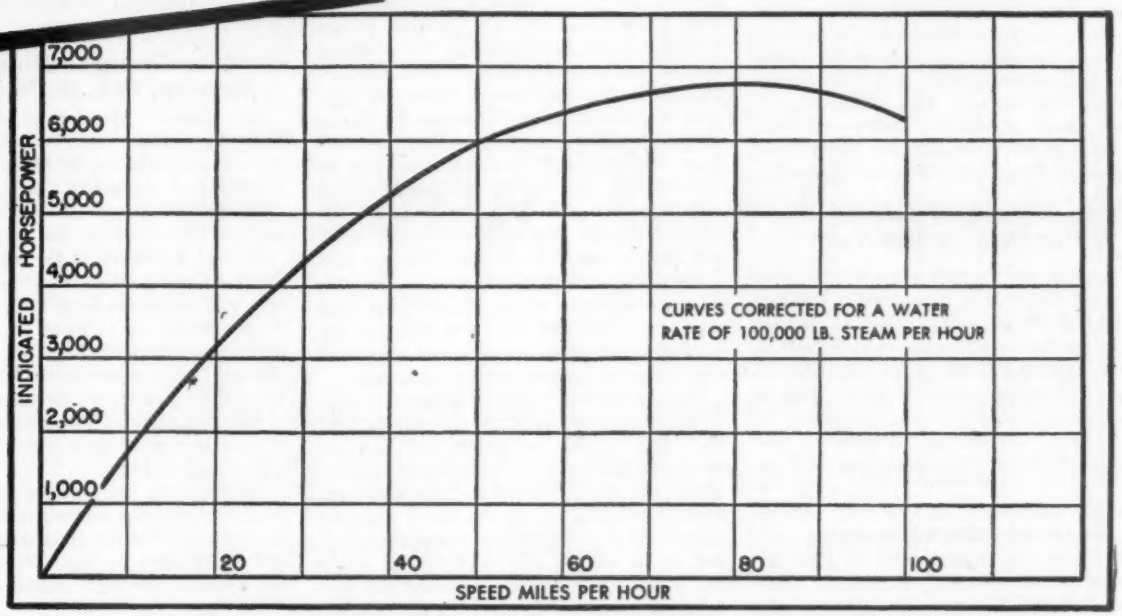
6552 INDICATED HORSEPOWER

The Franklin System of Steam Distribution

applied to

The Pennsylvania Railroad's

T-1 Locomotives



Ralph P. Johnson, Chief Engineer of the Baldwin Locomotive Works says:

"The maximum indicated horsepower of the T-1 locomotive is 40 percent higher than that of any locomotive previously tested at Altoona. The graph shows the maximum indicated horsepower of the T-1 locomotive at various speeds, based on a steam supply of 100,000 pounds per hour."

From paper read before the New York Railroad Club on May 17, 1945.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

him an adequate opportunity to present evidence—and based only on letters obtained from railroad files, with none of those which the association had written to shippers, farm groups, public organizations and other forms of transport.

"Before the association could so much as formulate its tentative program of research," Mr. Conn goes on to explain, "this investigation was apparently used before the public as a means to discredit the effort. The conclusions charging this association with being a railroad front were obviously predetermined—the 'proof' gathered afterwards.

"With authority of the Senate committee report, charging this association to be a railroad front, the Air Transport Association, the American Trucking Associations, and the Automobile Manufacturers Association entered upon a well coordinated campaign of misrepresentation of the association's origin and distortion of its recommendations. This campaign coincided with a similar public relations program on the part of the Anti-Trust Division of the Department of Justice."

Western Roads Ton-Miles Up 7 Per Cent at Mid-Year

Seven transcontinental lines which serve the West Coast have completed a total of 198,441,022,000 gross ton-miles of service during the first six months of this year as against 185,048,590,000 gross ton-miles in the corresponding period of 1944. This is an increase of 7.24 per cent, according to W. F. Kirk, western rail director of the Office of Defense Transportation at Chicago.

Freight train-miles in the first half of this year totaled 78,294,903, compared with 74,980,731 in the same months of 1944, an increase of 4.42 per cent. Passenger train-miles at 49,796,297 were up 2.28 per cent from the 48,687,532 recorded a year ago.

An even more impressive indication of the increased efficiency of movements to the West Coast in the first half of this year, was the showing in gross tons per train-mile. These increased in the six months ended June 30, 1945, to 2,559 from 2,491 in the same period last year.

The seven railroads in question are the Southern Pacific; Union Pacific; Atchison, Topeka & Santa Fe; Chicago, Milwaukee, St. Paul & Pacific; Western Pacific; Northern Pacific and Great Northern.

Strike on Georgia & Florida

Train service employees on the Georgia & Florida, who went out on strike on August 7, were still out on August 15 and the carrier has made no effort to operate trains since the walk-out began.

A request for an increase in the wage rates of these employees up to the trunk-line standard basis was received from representatives of the train service employees by the railroad under date of March 31, 1945. The request was handled in accordance with provisions of the Railway Labor Act, in conferences between the carrier and the employees' representatives, and in mediation by National Mediation Board, without reaching agreement. On June 16 President Truman appointed an "emergency board" to investigate and report to him with recommendations. The board heard the matter from June 22 to 27 and made a report to the President on July 7 recommending that the carrier increase its rates effective April 30, 1945, by four cents per hour and that the train service employees accept this increase as a fair and reasonable settlement of their demands.

Representatives of the employees in conference with the carrier on July 28 advised that they would not accept the increase recommended by the President's emergency board and the carrier offered an additional amount to bring all of the lower rates up nearer to the so-called "standard rates" but union officers also declined to accept this offer. The carrier informed the representatives of the employees that its earnings did not permit payment of the standard rates established for large-earning trunk lines.

On August 3 the representatives of employees notified the carrier that the employees would leave the service at 6 a. m. on August 7. The employees left the service as threatened. The employees' representatives are reported by H. W. Purvis, receiver and general manager of the road, to be "adamant in their position for standard rates of pay" which, Mr. Purvis says, "the carrier cannot meet" with its present earnings.

The Georgia & Florida has granted vacations with pay and other wage increases which have been awarded to employees in recent years—but these increases have been applied to a basis of pay which was lower to start with than so-called "standard" rates; and the demand which brought on the strike concerned itself with this "standard," i.e., the employees' representatives insisting that there be no difference between the wages paid by this small road and those of large railroad systems.

Welding Group to Hold Skeleton Session, Oct. 18, New York

The Annual Meeting of the American Welding Society, usually held in October and drawing several thousand welding engineers and designers, will not be held this fall, due to current travel and hotel conditions, the society has announced.

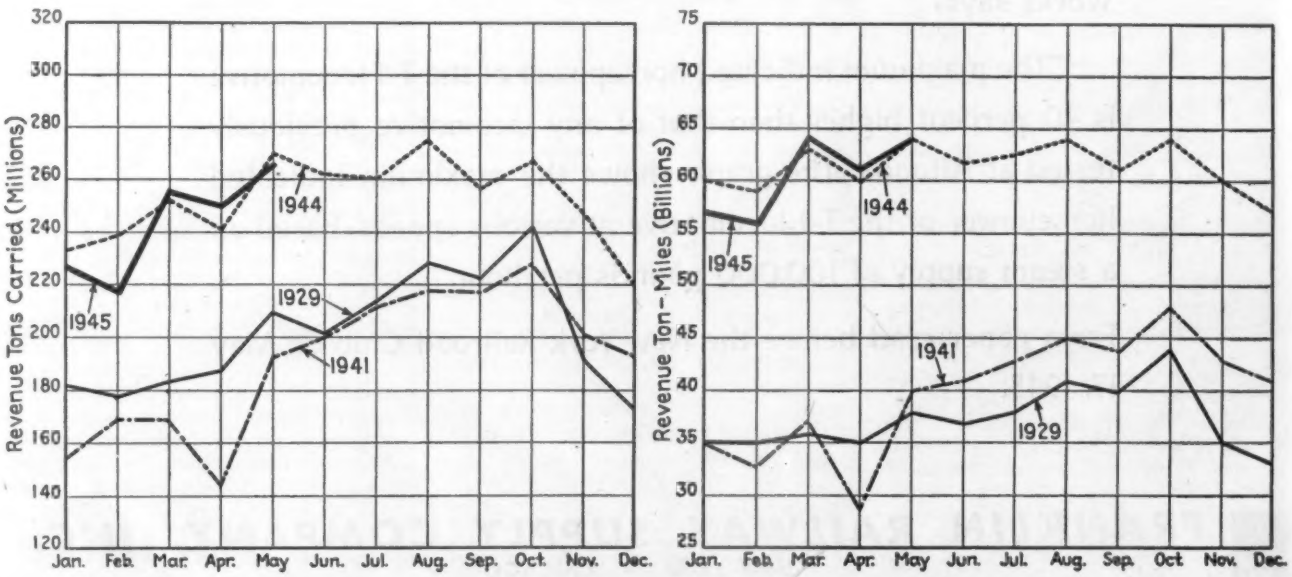
Instead, a meeting of the national officers, the board of directors, and committee chairmen will be held in New York, at the Hotel Pennsylvania, on October 18, to deal with matters requiring official action. This group also will present the society prizes, medals and other awards which have been given at opening sessions for outstanding contributions in the advancement of the science and art of welding.

Although the annual meeting is not being held, the program committee of the society has arranged for the presentation of papers and discussions in the Welding Journal, the society's monthly magazine.

Freight Car Loading

Loadings of revenue freight for the week of August 11 were not available for publication at the time this issue went to press.

Loading of revenue freight for the week



Revenue Tons and Revenue Ton-Miles—1945 Compared with 1929, 1941 and 1944

News Department continued on next left-hand page

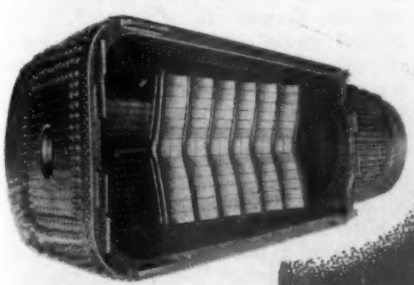
THE WATER LINE

IS YOUR LIFE LINE

To safeguard that life line constant alertness is a first essential. Water glasses and gauge cocks must be continually checked as a routine responsibility of the engine crew.

The circulation of water over the crown sheet and in the side water-legs is improved when Security Circulators are installed.

In addition to this, Security Circulators act as struts or stays to brace the firebox against undue distortion.



AMERICAN ARCH COMPANY, INC.

NEW YORK · CHICAGO

SECURITY CIRCULATOR DIVISION

ended August 4, totaled 863,910 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, August 4

District	1945	1944	1943
Eastern	161,982	160,953	165,689
Allegheny	192,056	194,248	191,954
Pocahontas	50,991	56,513	55,245
Southern	116,846	120,520	116,977
Northwestern	131,880	139,788	143,670
Central Western	140,182	141,804	128,211
Southwestern	69,973	75,768	70,387
Total Western Districts	342,035	357,360	342,268
Total All Roads	863,910	889,594	872,133
Commodities			
Grain and grain products	3,651	52,299	57,862
Live stock	13,457	15,669	14,161
Coal	164,419	174,869	173,146
Coke	14,058	14,288	14,329
Forest products	46,161	50,066	47,610
Ore	74,419	82,165	88,043
Merchandise l.c.l.	104,399	104,967	99,002
Miscellaneous	383,346	395,271	377,980
August 4	863,910	889,594	872,133
July 28	886,271	909,490	885,525
July 21	882,323	902,092	883,838
July 14	883,268	903,901	877,335
July 7	726,404	744,347	808,630
Cumulative Total, 31 Weeks	25,504,121	25,634,625	24,658,838

In Canada.—Carloadings for the week ended August 4 totaled 70,395 as compared with 73,442 for the previous week and 69,954 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Totals in Canada:		
August 4, 1945	70,395	34,421
August 5, 1944	69,954	37,499
Cumulative Totals in Canada:		
August 4, 1945	2,123,681	1,135,013
August 5, 1944	2,151,027	1,198,148

Eaton Rapids Collision Caused by Man Failure

Failure to obey a meet order was the cause of a head-on collision on the Michigan Central at Eaton Rapids, Mich., on June 30, according to the report of an investigation by the Interstate Commerce Commission under the supervision of Commissioner Patterson. Two employees were killed and 54 passengers, 4 mail clerks and 3 employees were injured.

Eaton Rapids is 24.2 miles west of Jackson, Mich., on the single-track line to Grand Rapids, on which trains are operated by timetable, train orders and a manual block system. The trains involved—No. 101, an 8-car westbound passenger and Extra 2038 East, made up of locomotive, 48 cars and caboose—each had received a train order establishing Eaton Rapids as a meeting point. The passenger train arrived at that station at 3:22 a. m., and stopped with the engine 1,521 ft. east of the west siding switch. The headlight was dimmed.

The freight approached Eaton Rapids at about 45 m.p.h. The fireman testified that he warned the engineer about the meeting point order when the engine was about 1,200 ft. west of the west switch, and that the engineer at once made a brake pipe reduction, following which he placed the brake valve in emergency position. The train passed the west switch, however, and struck No. 101. Although the freight firemen estimated his train's speed at that point at 15 m.p.h., the engineer of No. 101 estimated it at 40 m.p.h. and declared that the freight engine was working steam when the accident occurred. While the freight fireman was not fully familiar with the territory, he testified that the engineer did not sound the meeting point whistle signal, as required by rule.

The force of the collision drove No. 101 backward about 50 ft. and both engines and the first 7 cars of the freight were derailed and badly damaged. The commission's report pointed out that, "from the resultant damage," the freight's speed must have been "considerably higher" than 15 m.p.h. The engineer and front brakeman of the freight were killed, so it could not be determined why the meet order was not obeyed. The conductor and flagman of the freight were in the caboose and were not aware that anything was wrong until the collision occurred. The brakes had functioned properly en route.

I. C. C. Accounting Order

Division 1 of the Interstate Commerce Commission has prescribed various modifications and amendments to its Uniform System of Accounts for Steam Railroads, the purpose of which is to clarify requirements as to methods of accruing various unaudited items in order to attain greater uniformity therein. The order is effective October 1.

In addition to the provisions for handling unaudited items, the order also transfers from the asset to the liability side of the ledger the account entitled Discount on Capital Stock. This entry, which has appeared as account No. 724, hereafter will be designated Account No. 754, and will appear in connection with the capital stock account as a "red ink" item.

The modified provisions for the treatment of bills not received, items not billed out, delayed adjustments, and similar unaudited items affecting revenues or expenses require that reasonable estimates based on reliable information be used as bases for accruals of such items in current asset or liability accounts rather than in deferred accounts.

July Employment 0.17 Per Cent Below Previous Month

Railroad employment declined 0.17 per cent—from 1,453,629 to 1,451,200—during the one-month period from mid-June to mid-July, but the July total was 0.58 per cent above that of July, 1944, according to the preliminary summary based on reports from Class I line-haul roads and prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The total for mid-June is the highest figure so far reported during the present war, being 0.3 per cent above the previous record month, August, 1944.

The index number for mid-July, based on the 1935-1939 average as 100, was 139.2, as compared to 140.5 for the previous month and 138.4 for July, 1944.

Employment in July showed a decrease, as compared with June, in three categories of employment and an increase in four. The group showing the largest change was maintenance of way and structures, where the decline was 1.21 per cent. Other groups showing decreases were train and engine service, 0.12 per cent, and yardmasters, switchtenders and hostlers, 0.56 per cent. The increases as compared with the previous month ranged from 0.18 per cent for executives, officials and staff assistants to 0.86 per cent for transportation, other than train, engine and yard.

All groups except maintenance of equipment and stores (down 0.71 per cent) and train and engine service (down 0.04 per cent) were above July, 1944, the increases ranging from 0.09 per cent for yardmasters, switchtenders and hostlers up to 2.36 per cent for executives, officials and staff assistants.

Rear-End Accident Kills 32

Thirty-two persons were killed and 50 injured on August 9 when a second section of the Great Northern's "Empire Builder" ran into the rear end of the first section near Michigan, N. D. The first section had stopped to cool a hot journal box and the flagman had not been able to reach a proper flagging distance before the second section rounded a curve and telescoped the observation-sleeper which was the last car on the first section.

Each section was made up of 11 steel cars of which all but four were immediately movable after the accident and later proceeded west as one unit, pulled by the engine of the first section.

Because a number of the dead were service men it is expected that military authorities will conduct an investigation in conjunction with officers of the Great Northern, and that a joint statement will be issued later.

I. C. C. Solves Some Class Rate Problems, Defers Others

In clarification of various questions that have been raised with respect to the interim adjustments of class rates in the territory east of the Rocky mountains required by the Interstate Commerce Commission's order in its No. 28300 proceedings, letters from Chairman Rogers and Commissioner Aitchison were made public this week setting forth informally the commission's attitude toward a number of these matters.

Chairman Rogers' letter was addressed to the representatives of the eastern, southern and western railroads, asking them to arrange to have rate adjustments made with the water carriers so that interim changes can be made in joint barge-rail and rail-barge-rail rates, in accord with the requirements of the order in No. 28300, to "maintain substantially the same bases of differentials as now exist between them and the present all-rail rates." Any changes in such joint rates as are made effective for the interim period will not prejudice the position of any of the parties with respect to the final disposition of the No. 26712 proceedings, dealing with rail and barge joint rates, the chairman explained.

Commissioner Aitchison's letter was addressed to a committee of freight association chairmen named by the carriers in Official, Southern, Western Trunk-Line, and Southwestern territories to consult with the commission with respect to problems arising in connection with compliance with the order in the class rate case in an effort to expedite publication of the

News Department continued on next left-hand page

On Borrowed Time

The continued use of locomotive superheater units beyond their safe service life . . . is service on borrowed time. The penalty is normally an epidemic of enginehouse repairs . . . which is unnecessary and a waste of time and money.

When superheater units have provided a service life of 500,000 miles, do not keep them serving on borrowed time—have them remanufactured at our plant.

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tariffs. The letter first outlined six subjects as to which the railroads seek changes in the report and order now prevailing, where the commission has decided that petitions should be filed, and parties be given an opportunity to reply, before it is decided whether or not to make such changes.

These proposals were stated as follows:

1. That class rates within extended zone C in Wisconsin and between that zone and points in Official territory be treated as intraterritorial within Official territory, rather than within Western Trunk-Line territory or interterritorial, as provided by the order.
2. That class rates over unused or "trick" routes need not be changed in cases where the reduced class rates would be less than existing (and unchanged) commodity rates now in effect over going or used routes.
3. That where commodity, exception or column rates now alternate with class rates subject to ratings in the classifications, the alternation should continue with the present, not the new, class rates.
4. That rates specifically published to apply on coastwise and intercoastal traffic be left unchanged unless the new domestic class rates would be lower.
5. That certain class rates reduced by carriers to meet competition of other forms of transportation, not including class rates reduced in the South for distances up to 190 miles, be not reduced.
6. That authority be granted to add to the minimum scale set forth in the report 90 per cent of the arbitraries that have been assigned to short or weak lines in connection with rates to, from and between points on such lines.

The letter also summarized action taken informally by the commission, without prejudice to further consideration or action by it and without prejudice to the rights of anyone affected "if the very technical matters involved are not properly resolved," as to some ten questions raised by the carriers. The carriers were advised that they could publish tariffs, subject to possible suspension, to provide for certain proposed adjustments. One would restore on interterritorial traffic from Official to Southern territory the application of rates to border points as minima, such minima to reflect the new class rates. Another would treat as intraterritorial Official territory rates those applying between points in that territory on routes passing through Southern territory. Still another would leave unchanged bridge-scale arbitraries applicable between points on the western border of Official territory and short haul points in Western Trunk-Line territory, also between western border points in Southern territory and points in Southwestern territory applicable on interterritorial traffic. The same decision applies to the application of the maximum rule on rates to and from Western Trunk-Line and Southwestern territories, such as the Deming, N. M., maximum, where the actually published class rates would be reduced, leaving the maximum rule unchanged.

The carriers were advised that it is desirable that exception ratings applicable in Southern territory and between Southern and Official territories which are identical with Southern classification ratings be canceled so the 10 per cent reduction will apply. They were also advised that there appears to be no order to prevent their applying to traffic on exceptions or commodity rates the prescribed 75 cents minimum charge on l. c. l. class rate traffic. There is no compulsion on the railroads to establish new class rates on commodities where class rates are not now applicable, the letter also stated.

Pointing out that there was a difference of opinion among the carriers as to how to deal with provisions in exception tariffs that are exceptions to rules or packing specifications of the classification, the letter noted the view of commission representatives that the new class rates should be applied on articles subject to class rates and that other exceptions or rules, which do not change ratings or minimum weights, should apply in connection with the new rates.

June Accident Statistics

The Interstate Commerce Commission on August 9 made public its Bureau of Transport Economics and Statistics preliminary summary of steam railway accidents for June and the first half of 1945, compared with the same 1944 periods. The compilation, which is subject to revision, follows:

	Month of June		6 months ended with June	
Item	1945	1944	1945	1944
Number of train accidents*	1,404	1,282	8,857	8,203
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	172	156	750	683
Injured	102	110	565	543
Passengers on trains:				
(a) In train accidents*				
Killed	15	2	18	9
Injured	97	93	758	592
(b) In train-service accidents				
Killed	12	6	33	28
Injured	253	251	1,277	1,378
Travelers not on trains:				
Killed	2	1	5	6
Injured	83	84	565	522
Employees on duty:				
Killed	83	64	454	512
Injured	3,905	3,775	23,506	22,603
All other nontrespassers:**				
Killed	144	119	991	991
Injured	475	417	3,546	3,343
Total—All classes of persons:				
Killed	428	348	2,251	2,229
Injured	4,915	4,730	30,217	28,981

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	123	105	899	885
Injured	255	216	2,051	1,981

Car Ferry Lines Retain Status as Originating Carriers

Unless the Chicago & North Western, Pere Marquette and Ann Arbor agree upon terms by which the first-named road is compensated by the other two for their joint use of its terminal facilities at Manitowoc, Wis., and the terminal switching service it performs for them, and publishes tariffs accordingly, the Interstate Commerce Commission, after hearing, will prescribe appropriate charges, according to a report and order by Division 2 in the No. 29030 and related proceedings.

The case grew out of a complaint to the commission by the C. & N. W. that its revenue for terminal service performed at Manitowoc in connection with the car ferry operations of the other two railroads on Lake Michigan was inadequate. The ferry lines have no tracks or other physical facilities for handling cars at that point, and for many years their vessels have used C. & N. W. ferry slips and that road has used its crews and power to move cars to and from the decks of the ferries and to and from its freight house, team tracks and industrial sidings, being compensated therefor under arrangements that have been modified from time to time, but have not been published in a tariff, except for a limited amount of business handled on joint rates.

In 1943 the C. & N. W. served notice on the ferry lines that the payment of $7.50 per car on carload freight and $4.05 per car on l. c. l. received by it for its switching and terminal service, on traffic local to Manitowoc, was unsatisfactory. It asked the commission to require the ferry roads, and their eastern and southern connections, to establish joint rates with it on traffic to and from Manitowoc not subject to such rates, but the ferry roads filed a cross complaint with the commission asserting that the failure of the C. & N. W. to publish switching charges applying to its services in connection with their ferry operations was unreasonable, and that it was unlawfully attempting to eliminate them as originating carriers at Manitowoc. Local shippers in general supported the position of the ferry lines, arguing that their advantageous location on the border between Official and Western territories would be jeopardized if those carriers should cease to function at Manitowoc as originating and terminating lines as a result of the division arrangement, under which they would be succeeded in such respects by the North Western.

In a proposed report, Examiner William A. Disque, as noted in *Railway Age* of October 28, 1944, page 665, recommended that the commission should find that the failure of the ferry lines to agree to publication of joint rates to and from Manitowoc was not unreasonable, and that it should prescribe switching charges to be published in a tariff for absorption by the ferry lines, such charges to be substantially higher than those formerly paid under the agreement which the C. & N. W. terminated.

In effect, the division followed the examiner's recommendation with respect to the joint rate proposal, but not where the prescription of a terminal charge was proposed. The division said it was unable to find that joint rates are necessary, as there is no public demand for them, and shippers' interests would be best promoted by continuance of direct service at Manitowoc by the ferry lines. On the other hand, the ferry lines' proposal that the C. & N. W. should receive the same switching charge from them as from the Soo Line, with which the North Western has a reciprocal switching arrangement at that point, did not impress the division favorably, since the element of reciprocity would be absent in the case of the ferry lines because they maintain no tracks or motive power there.

Basing its action of section 3(5) of the Interstate Commerce Act, which, it observed, affords a shipper as well as a carrier a remedy in instances where the use of terminals is involved, the division

News Department continued on next left-hand page

"AP" DECELOSTAT . . .

The *Mechanical-Pneumatic* Wheel Slip Control

for { Functional Simplicity
Simplified Installation
Ease of Maintenance

SOFTENS THE BRAKE
WHEN WHEEL SLIP IMPENDS.

Functional Simplicity . . . Single rotating element, operating on ball bearings—constantly reflects wheel performance at the scene of action.

Simplified Installation . . . apparatus confined entirely to the truck. On-the-spot performance regulates braking pressure promptly when wheel retardation exceeds predetermined rate.

Ease of Maintenance . . . No connections between car body and truck means fewer connections to inspect and maintain.

Westinghouse Air Brake Company

Wilmerding, Pa.

held that it could properly require the continued joint use by the ferry lines of the North Western's Manitowoc terminal facilities, inasmuch as such use will be practicable without impairing that line's ability to handle its own business. Tariffs should be published covering the terminal changes agreed on, it pointed out, and such compensation should cover not only the ferry lines' use of the C. & N. W. freight house and team tracks but the terminal switching service which that company performs for them.

The division's report was accompanied by an order requiring use of the C. & N. W. terminals at Manitowoc by the ferry lines. It was indieated that Commissioner Alldredge concurs in the result. The other two members of the division are Commissioner Splawn and Chairman Rogers.

In addition to the controversy as to whether the ferry lines should continue joint use of the Manitowoc facilities, the proceedings also involved complaints by the C. & N. W. that its divisions from existing joint rates with those carriers applying to cheese and eggs are inadequate, but the division did not find that the evidence supported that claim.

Equipment and Supplies

SIGNALING

The LOUISVILLE & NASHVILLE is replacing semaphore signals on the 183 miles of road between Latonia, Ky., and Corbin, with Type SA searchlight signals manufactured by the General Railway Signal Company.

The CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has placed an order with the Union Switch & Signal Co., for the materials required to install centralized traffic remote control for passing sidings at Woodward, Iowa, and Bouton, with the functions to be controlled from a Style B-30 machine located at Madrid, 5.5 miles east of Woodward. Along with the control machine involved, the order includes the office line coding and storage units, SL-6 electric switch locks, Style H-2 searchlight signal units, Style M-22A electric switch movements, relays and rectifiers to be housed at each of the two field locations. The installation work will be handled by railroad forces.

The SOUTHERN PACIFIC has placed an order with the Union Switch & Signal Co., covering materials for the installation of centralized traffic control on 22 miles of single track between Lucin, Utah, and Lemay. This new section will tie in with the present Lemay-Bridge C. T. C. section to handle trains in this territory from the control point at Ogden. The order includes control machine equipment, office and field coding units, Style H-2 searchlight high and dwarf signals, Style M-22A dual-control electric switch layouts, Style SL-6A electric switch lock layouts, together with the necessary relays, rectifiers, transformer and housings. The installation will be carried out by railroad construction forces.

The WHEELING & LAKE ERIE has placed a contract with the Union Switch & Signal Co., for the installation of centralized traffic control system between Brewster, Ohio and Adena, 56.5 miles, with the Style C control machine located in the dispatcher's office at Brewster, and desk control panels (B-30 type) installed in the Harmon and Adena Yard offices for the control of the local signaling functions at these two locations. Aside from these machines and code equipment, the work involves M-22A dual-control electric switch layouts, Style H-2 searchlight signals, Style SL-6A electric switch lock layouts for hand-operated main line switches, and the relays, housings, etc.

Supply Trade

E. A. Lofquist, a graduate of the U. S. Naval Academy and until recently on active duty as a captain in the U. S. Navy, has been appointed a special representative for the **American Car & Foundry Co.'s** sales department with headquarters at the Chicago office.

Barlow Brooks, formerly manager of sales and development of Kinkaid Industries, Chicago, has resigned to become manager of the recently-created Finished Formed Shapes division of the **Reynolds Metals Company,** with headquarters at Louisville, Ky. The new division will supply a full line of continuous roll formed shapes and finished extrusions to manufacturers. Mr. Brooks was born at Oswego, N. Y., on September 21, 1906, and is a graduate of the State Trade School at Bridgeport, Conn., and the University of Illinois. After graduation he went with the Standard Coupler Company and within five years he was promoted to western sales representative, with headquarters at Chicago. In 1935 he joined the Kinkaid organization, remaining with that company until his new appointment.

George T. Johnson has been elected president and general manager of the **Buckeye Steel Castings Company** to succeed **A. H. Thomas,** who becomes chairman of the board. Mr. Johnson was graduated from Cornell University with a degree in mechanical engineering. He joined the Buckeye Steel Castings Company as a moulder's helper in the foundry and progressed through the various departments until he was appointed in charge of the engineering and inspection divisions. Later he was appointed successively third vice-president and second vice-president in charge of production and sales engineering. He was elected first vice-president in charge of the sales department in 1937, with other administrative duties including general supervision of engineering. He is a member of the American Society of Mechanical Engineers, the American Society of Testing Materials, and has served on various committees touching on the activities of the cast steel and railroad equipment industries.

Financial

ARKANSAS.—*Bank Loan.*—The Arkansas Railroad has applied for Interstate Commerce Commission authority to obtain a $28,000 bank loan at 6 per cent to cover the cost of ties and track materials required to rehabilitate its line.

ATCHISON, TOPEKA & SANTA FE.—*Entrance to Long Beach, Calif.*—This company has applied to the Interstate Commerce Commission for approval of an arrangement with the Southern Pacific and the Pacific Electric under which it will obtain trackage rights over lines of those carriers, amounting respectively to 1.95 miles and 2.76 miles, giving it access to the port of Long Beach, Calif. As noted in *Railway Age* of June 16, page 1071, the commission recently authorized the Santa Fe to construct a 2.02-mile extension of its lines which now serve the Wilmington area of Los Angeles in order to reach the adjacent Long Beach waterfront, on the ground that the public interest justified such a finding in view of the inability of the Santa Fe and the Southern Pacific to agree upon terms affording the Santa Fe trackage rights on the S. P. line reaching that area. Further negotiations have resulted in an arrangement whereby the S. P. and the Pacific Electric have granted the Santa Fe rights to use lines of their ownership which will afford it access to the port of Long Beach, effective to 2033, for which the Santa Fe is to pay $8,700 per year plus a fixed proportion of the costs of additions and betterments and maintenance. The Pacific Electric is to perform switching service at Long Beach for the Santa Fe, under this arrangement, under terms set forth in the agreement, thus extending the service it now performs at that point for other carriers.

ATLANTIC COAST LINE.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire the properties of the Atlanta, Birmingham & Coast, which it now controls through ownership of all its common stock and 4,446 shares of 5 per cent preferred stock. The remaining preferred will be redeemed by the A. C. L. at 105½ per share.

CHICAGO, ROCK ISLAND & PACIFIC.—*Seeks Bond Payment Permit.*—Joseph B. Fleming and Aaron Colnon, trustees of the Chicago, Rock Island & Pacific at Chicago, have petitioned United States District Judge Michael L. Igoe, at Chicago, for authority to pay $34,279,750 to holders of outstanding bond issues and general creditors. The request was made in accordance with provisions contained in the Interstate Commerce Commission plan of reorganization for the Rock Island.

GREAT NORTHERN.—*Refunding.* — This company has asked for Interstate Commerce Commission approval of its program to replace its outstanding series E and series I general mortgage gold bonds with new issues with later maturities and lower interest rates. The plan contem-

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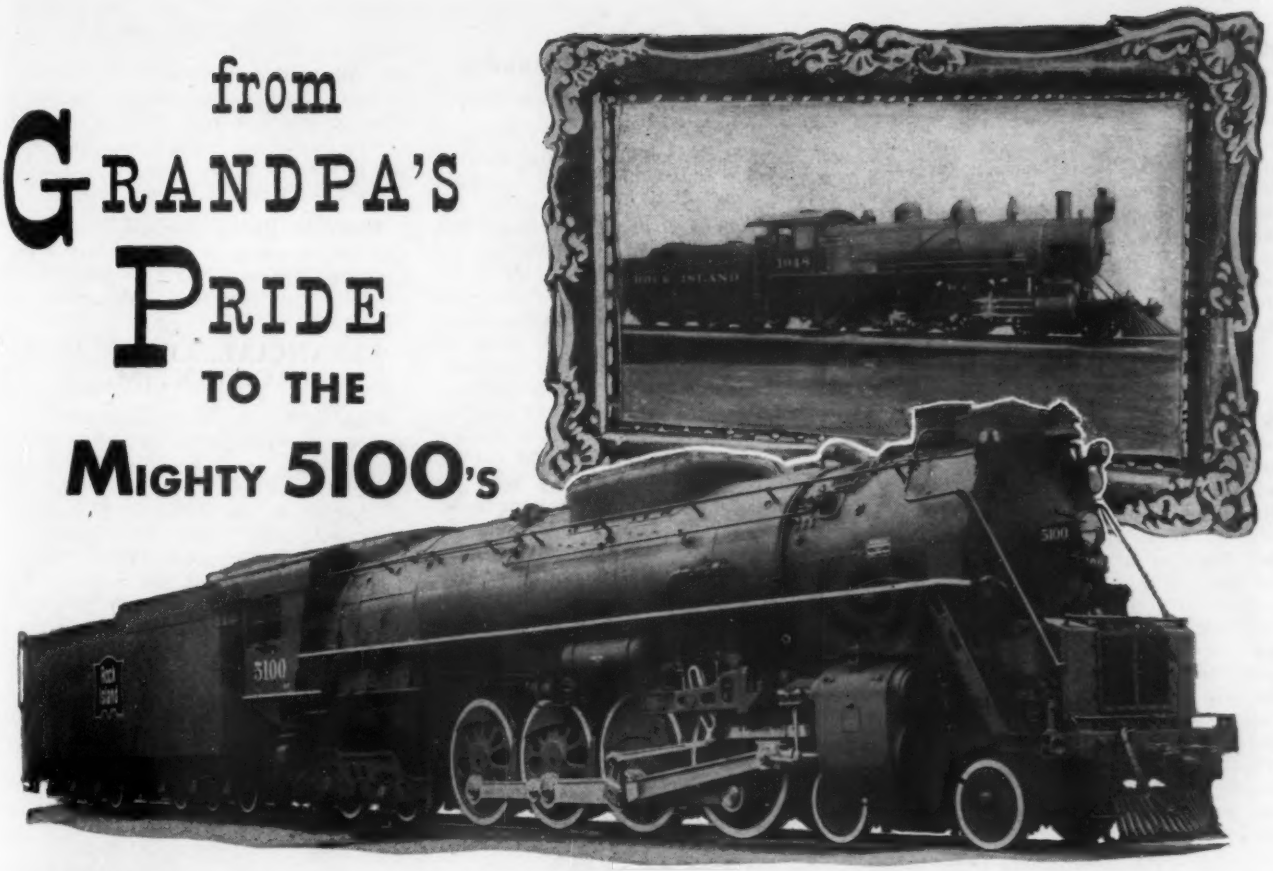
from GRANDPA'S PRIDE TO THE MIGHTY 5100's



Rock Island HAS DEPENDED UPON HSGI PARTS

Grandpa loved old 1048 when he drove her.

He would like the Rock Island's new 5100's too, for Grandpa was always progressive and the performance of these modern locomotives would amaze and delight him. Yet the old man would be pleased to find one Rock Island practice unchanged down through the years; that is the use of HUNT-SPILLER GUN IRON for valves, cylinders, and other vital locomotive parts.

We maintain, along with Grandpa, that one could ask for no more convincing proof of the superior quality of HSGI than the fact that the Rock Island and 75 other great railroads have been our steady customers since or before 1910. Many of them use the complete service of parts listed below because each is a money saver and efficiency increaser.

HUNT SPILLER GUN IRON HSGI *AIR FURNACE PROCESS*

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Cylinder Bushings	Crosshead Shoes	Dunbar Sectional Type Packing
Cylinder Packing Rings	Hub Liners	Duplex Sectional Type Packing
Pistons or Piston Bull Rings	Shoes and Wedges	for Cylinders and Valves
Valve Bushings	Floating Rod Bushings	(Duplex Springs for Above
Valve Packing Rings	Light Weight Valves	Sectional Packing)
Valve Bull Rings	Cylinder Liners and Pistons	Cylinder Snap Rings
	for Diesel Service	Valve Rings, All Shapes

plates the retirement of $50,000,000 of the series I 3¼ per cent bonds, due in 1967 and callable at 104, and $36,956,000 of series E 4½ per cent bonds, due in 1977 and callable at 105. The new issue is to total $75,000,000, being made up of $37,500,000 of series N general mortgage bonds, due in 1990, and $37,500,000 of series O, due in 2000, with the interest rates to be determined by competitive bidding. The company has funds available to supplement the proceeds of these issues to complete the retirements outlined.

NORTHERN PACIFIC.—*Operating Rights.*—In a proposed report, Examiner W. J. Schutrumpf has recommended that the Interstate Commerce Commission approve an arrangement under which this company will operate a line built by the U. S. Navy, at a cost of about $7,500,000, from Shelton, Wash., to Bremerton, with certain branches, a total of about 48 miles, the purpose of which is to afford all-rail transportation facilities to installations at the Bremerton Navy Yard and neighboring magazines and ammunition depots which previously have been accessible only by water. Pending approval of the arrangement, the company has been operating the line as a private carrier for the Navy. The commission's approval, however, should be on the condition that the Northern Pacific make joint rates and through all-rail rates with the Union Pacific and the Milwaukee applicable to traffic originating on their lines and consigned to points on the Navy line, according to the examiner's recommendation. Such a condition, under the terms of the agreement, the examiner conceded, might be a "futile effort or mere gesture by the commission" to provide some means to afford the two carriers named "some measure of protection" from loss of traffic previously handled by them in rail-water routes to the same destinations.

TAMPA NORTHERN.—*Reorganization Expenses.*—Division 4 of the Interstate Commerce Commission has fixed maximum limits of final allowances for services and expenses incurred by the first mortgage bondholders' protective committee in connection with the reorganization of this company under section 77 of the Bankruptcy Act. The amount requested was $60,465 and the total approved was $52,465, the principal item being $45,000 compensation for Marshall, Carey & Doub, counsel.

Average Prices Stocks and Bonds

	August 14	Last week	Last year
Average price of 20 representative railway stocks..	53.11	54.32	41.43
Average price of 20 representative railway bonds..	96.85	97.49	89.32

Dividends Declared

Chestnut Hill.—75¢, quarterly, payable September 4 to holders of record August 20.

Delaware & Bound Brook.—50¢, quarterly, payable September 10 to holders of record September 3.

Little Miami—Special guaranteed, 50¢, quarterly; original, $1.10, both payable September 10 to holders of record August 25.

Pittsburgh, Youngstown & Ashtabula. — Preferred, $1.75, quarterly, payable September 1 to holders of record August 20.

Abandonments

DELAWARE, LACKAWANNA & WESTERN.—In a proposed report in the Finance Docket 13957 proceedings, Examiner Paul C. Albus has recommended that the Interstate Commerce Commission should find that the imposition of conditions for the protection of employees as a result of the line abandonment authorized in the proceedings is not required. A further hearing was held on petition of the Order of Railroad Telegraphers, but the examiner found that the record showed no evidence that any employee was adversely affected. Counsel for the carrier contended that the union's general chairman should not be permitted to present testimony with respect to the claims of individual employees unless he submitted proof of specific authorization from each one to represent him, in view of the Supreme Court decision in the *E. J. & E. case* (reported in *Railway Age* of June 16, page 1072), but the examiner held that the circumstances were different, in that the cited case involved the settlement of money claims, whereas the issue raised by the telegraphers was limited to the imposition by the commission of conditions under which claims could be settled.

Railway Officers

EXECUTIVE

Ottis O. Albritton, whose promotion to assistant to the vice-president, purchases and stores, of the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of August 4, was born at McComb, Miss., on December 27, 1899,

Ottis O. Albritton

and entered railway service in October, 1918, as a laborer of the I. C., at McComb. Later he served as stockman, clerk, stock keeper, line stock keeper, foreman and general foreman, with the same headquarters until May 1, 1934, when he was promoted to chief clerk to the division storekeeper at McComb. On January 1, 1940, Mr. Albritton was appointed a special clerk in the office of the general storekeeper at Chicago, and one year later he was advanced to division storekeeper, with headquarters at Memphis, Tenn., the position he held at the time of his new appointment.

Malcolm Putty, executive vice-president and treasurer of the Missouri & Arkansas at Harrison, Ark., has been elected president, with the same headquarters.

FINANCIAL, LEGAL AND ACCOUNTING

Uno E. Nordeen, whose promotion to assistant general auditor of the Southern Pacific, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of August 4, was born at Menominee, Mich., on June 21, 1896. He entered railway service in December, 1921, in the accounting department of the Southern Pacific at San Francisco, the city which has been his headquarters up to the present

Uno E. Nordeen

time. He served as a clerk, special accountant and assistant chief clerk until September, 1935, when he was promoted to chief clerk to the assistant general auditor. In July, 1938, Mr. Norden was advanced to assistant auditor of disbursements, and one year later he was appointed assistant to the general auditor. In January, 1942, he was promoted to auditor of disbursements, the position he held at the time of his new appointment.

R. V. Cole, assistant auditor of disbursements of the Southern Pacific at San Francisco, Cal., has been promoted to auditor of disbursements, with the same headquarters. **G. W. Klee** has been appointed assistant auditor of disbursements, succeeding Mr. Cole.

Prescott J. Kendall, whose promotion to general auditor of the Southern Pacific, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of August 4, was born at San Luis Obispo, Cal., on July 13, 1898. He entered railway service on March 10, 1919, as a clerk and special accountant of the Southern Pacific at San Francisco, and on September 1, 1929, he was appointed chief clerk to the auditor. On August 15, 1932, Mr. Kendall was ad-

News Department continued on second left-hand page

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS.

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vanced to assistant to the general auditor, and three years later he became auditor of miscellaneous accounts. On April 1, 1942, he was promoted to assistant general auditor, the position he held at the time of his new appointment.

Prescott J. Kendall

Henry Craig Friel, K. C., regional counsel of the Canadian National at Moncton, N. B., has been appointed general solicitor for the system at Montreal, Que. Mr. Friel was born at Dorchester, N. B., and was graduated from St. Mary's College at Halifax, N. S., and St. Francis Xavier University, Antigonish, N. S., from which he received his Bachelor of Arts degree in 1922. He was graduated from Dalhousie University Law School with a L.L.B. degree in 1925. Mr. Friel subsequently entered private practice with the firm of Friel & Friel, barristers and solicitors, at Moncton, and he joined the Canadian National as regional counsel in May, 1943, remaining in that post until his recent appointment as general solicitor.

Henry Craig Friel

OPERATING

O. W. Campbell, director of personnel of the Missouri-Kansas-Texas, has been promoted to assistant general manager, a newly-created position, with headquarters as before at Dallas, Tex. He will retain supervision over personnel, public relations and wage agreements, and safety activities.

R. L. Rickard, night general yardmaster of the Union Pacific at Albina, Ore., has been promoted to terminal trainmaster, with the same headquarters. **M. V. Newton,** terminal trainmaster at Portland, Ore., has been appointed trainmaster of the third and fourth sub-divisions of the Oregon division, with headquarters at The Dalles, Ore., succeeding **A. R. Brown,** who has been transferred to the second subdivision, with headquarters at La Grande, Ore.

Caleb R. Megee, whose appointment as vice-chairman in charge of freight car equipment of the Car Service Division of the Association of American Railroads at Washington, D. C., was announced in the *Railway Age* of July 7, was born on a farm near Milton, Del., on December 7, 1888, and was educated at LaSalle Extension University. He entered railroading in April, 1905, as assistant to the agent and telegraph operator of the Baltimore, Chesapeake & Atlantic (now the Pennsylvania) at Easton, Md. In December, 1907, he joined the Pennsylvania as telegraph operator on the Delaware division, and thereafter he served in various transportation department positions, including operator, extra agent, chief clerk, agent, and train dispatcher. In April, 1923, he was appointed car service agent of the Car Service Division, becoming district manager at Detroit, Mich., in November, 1929, and transferring to Pittsburgh, Pa., in September, 1933. He was later named assistant manager of the Division's Open Top Section, and on September 1, 1942, he was promoted to manager of the Open Top Section, the position he held at the time of his recent appointment as vice chairman in charge of freight car equipment.

Caleb R. Megee

Arthur H. Gass, whose appointment as vice chairman in charge of passenger car equipment of the Car Service Division of the Association of American Railroads was announced in the July 7 issue of *Railway Age,* was born at Rolfe, Pa., on August 19, 1893, and attended Columbia University at New York and the Sorbonne at Paris. He entered railroading in 1912 with the Chesterfield & Lancaster, remaining with that road until 1914. From 1917 to 1919 he served with the A. E. F., and upon his return he became district manager of the Car Service Division at Boston, Mass., later transferring to Detroit, Mich., and St. Louis, Mo. In May, 1940, he was appointed assistant to the chairman of the Car Service Division at Washington, and he was attached to the office of the French Purchasing Commission at the time of his appointment as manager of the newly-created military transportation section of the C. S. D. on August 1, 1940, the post he held until his recent elevation to vice-chairman in charge of passenger car equipment.

Arthur H. Gass

William E. Callahan, whose appointment as manager of the Open Car Section of the Car Service Division of the Association of American Railroads at Washington, D. C., in addition to his duties as manager of the Tank Car Section, was announced in the *Railway Age* of July 7, was born November 8, 1893, at Branford, Conn. He was educated at Branford High School and La Salle Extension University, entering railroad service in May, 1912, as a clerk on the New York, New Haven & Hartford. Two years later Mr. Callahan became agent for the same road at West Haven, Conn., and he thereafter served

Harris & Ewing

William E. Callahan

as traveling agent from August, 1915, until December, 1916. On the latter date he became traveling inspector for the American Railway Association, remaining in that position until May, 1918, when he began a period of service in the U. S. Army which continued until July, 1919. Mr. Callahan then returned to the A. R. A., serving in turn as chief clerk at Washington, traffic representative at Los Angeles, Cal., and Jacksonville, Fla., and again as chief clerk at Washington. He was in the latter position in April, 1931, when he became district manager for the Car Service Division at Cincinnati, Ohio. Mr. Callahan remained at Cincinnati until September, 1941, when he became office manager for the Car Service Division at Washington, and the following April he was named manager of the newly-created Tank Car Section, over which he will continue general supervision while working in his new capacity as manager of the Open Top Section.

T. F. Shanahan, assistant superintendent of the first and second subdivisions and branches of the Nebraska division of the Union Pacific at Omaha, Neb., has been transferred to the Omaha, Council Bluffs and South Omaha terminals, with the same headquarters. **Elgin Hicks** has been appointed assistant division superintendent in charge of the first and second subdivisions and branches, with headquarters at Grand Island, Neb.

Joseph J. Kelley, whose promotion to manager of the Military Transportation Section of the Car Service Division of the Association of American Railroads at Washington, D. C., was announced in the *Railway Age* of July 7, was born July 7, 1899, at Baltimore, Md., and was graduated from Baltimore Polytechnic Institute in 1917 and Colgate University in 1922, having served overseas with the U. S. Army from 1917 to 1919. He entered railroading with the Baltimore & Ohio in July, 1925, remaining in the transportation department until January, 1933, when he was furloughed. He was employed by the Chevrolet Assembly Plant at Baltimore from April, 1935, to April, 1936, when he became car service agent of the A. A. R. at Baltimore, and he remained in that post until February, 1941, when he was appointed secretary of the Allegany Regional Advisory Board at Pittsburgh, Pa. One year later he was named assistant to the manager of the Military Transportation Section of the Car Service Division, and in October, 1943, he was advanced to assistant manager of that section, the position he held at the time of his recent promotion to manager.

TRAFFIC

Arthur W. Blake has been appointed general agent of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at Sioux Falls, S. D.

C. D. Lafferty, industrial agent of the Southern Pacific at San Francisco, Cal., has been promoted to systemwide general industrial agent, with the same headquarters, succeeding **W. A. Westington,** who has retired. **J. W. Ostle,** district freight agent at Oakland, Cal., has been advanced to industrial agent, with headquarters at San Francisco, relieving Mr. Lafferty.

B. J. Combs has been appointed assistant general freight agent of the Southern Pacific, with headquarters at San Francisco, Cal., succeeding **Charles N. Bell,** deceased.

William L. Bailes, whose promotion to assistant freight traffic manager of the Chesapeake & Ohio, with headquarters at Chicago, was reported in the *Railway Age* of August 4, was born at Richmond, Va., on December 2, 1899, and entered railway service with the C. & O., on July 15, 1916. He held various clerical positions until October 1, 1925, when he was appointed traveling freight agent, with headquarters at Birmingham, Ala. One year later he was transferred to Cincinnati, Ohio, and on August 1, 1928, he was promoted to commercial agent at Atlanta, Ga. On March 1, 1936, Mr. Bailes was advanced to general agent, with headquarters at Pittsburgh, Pa., and on June 1, 1938, he was appointed division freight agent at Richmond. Mr. Bailes was promoted to assistant to the freight traffic manager, with the same headquarters, the position he held at the time of his new appointment.

MECHANICAL

J. L. Tyre, traveling car inspector of the Atlantic Coast Line, has been appointed general car inspector of the Southern division with headquarters at Waycross, Ga. **J. H. Welch,** traveling car inspector, has been named general car inspector of the Northern division.

PURCHASES AND STORES

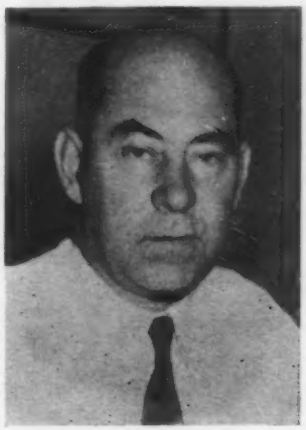
Hugo V. Gamper, special assistant in the purchasing department of the Illinois Central at Chicago, has been promoted to assistant general purchasing agent, with the same headquarters, a newly-created position.

J. J. Clark, assistant purchasing agent of the Wheeling & Lake Erie and the Lorain & West Virginia at Cleveland, Ohio, has been named purchasing agent with the same headquarters succeeding **William Walter Griswold,** who has retired after 40 years of service. The office of assistant purchasing agent has been abolished.

SPECIAL

Churchie F. Adams, whose promotion to superintendent of rules and safety of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of August 11, was born at Iuka, Miss., on September 4, 1892. He entered railway service on December 12, 1908, as an agent-operator of the T. & P., subsequently holding various clerical positions in the offices of the master mechanic, trainmaster and division superintendent at different points of the road until August, 1919, when he was promoted to dispatcher, with headquarters at Alexandria, La. Mr. Adams then was advanced to assistant chief dispatcher and to trainmaster, with the same headquarters, and later was promoted to train rules examiner at Dallas, the position he held at the time of his new appointment.

Thomas E. Owen, editor of the L. & N., magazine published by the Louisville & Nashville, has been promoted to editor-director of a newly-created advertising and publications department, with headquarters as before at Louisville, Ky. **J. L. James,** assistant editor of the magazine, has been advanced to associate editor,



Thomas E. Owen

and **Kincaid Herr,** staff correspondent, has been promoted to assistant editor, succeeding Mr. James.

Mr. Owen was born at Louisville, and in October, 1913, he entered railway service with the Louisville & Nashville. He held various positions at Louisville until March, 1925, when he was promoted to editor of the newly-created L. & N. magazine. He is also a past president of the American Railway Magazine Editors' Association and a past general chairman of the employees publication section of the National Safety Council.

OBITUARY

Thomas M. Conniff, superintendent of shops of the Delaware, Lackawanna & Western, at Scranton, Pa., died in a hospital at that city on August 10.

Amos C. Ridgway, who retired in 1920 as vice-president of the Chicago, Rock Island & Pacific, died at Santa Monica, Cal., on August 9.

Bertram Quelch, auditor passenger receipts of the Atlantic Coast Line, at Wilmington, N. C., died on July 26 after a long illness. Mr. Quelch was born at Bowburn, Durham, England, on August 2, 1874, and joined the Atlantic Coast Line as a clerk in the office of auditor of passenger receipts on November 1, 1890. He was promoted to chief clerk in June, 1902, and on April 21, 1921, he was appointed assistant auditor passenger receipts. On June 1, 1927, he was advanced to auditor passenger receipts, the post he held at the time of his death.

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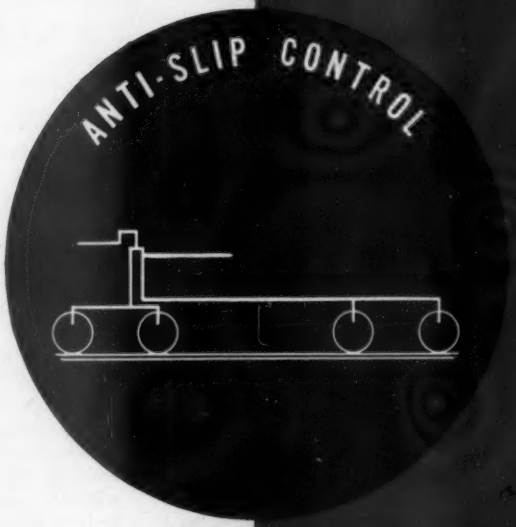
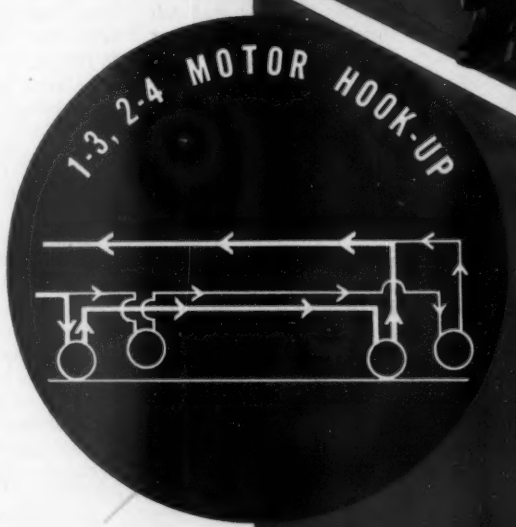
One of the many advantages of Baldwin-Westinghouse Diesel Electric Locomotives is the tremendous draw-bar pull they can exert in starting, without shocks and jerks that might damage valuable lading. You'll find the reason in three unique mechanical and electrical features.



Anti-slip control immediately and automatically reduces engine speed if all wheels slip, restoring the feed corresponding to throttle setting the moment slippage ceases.

Air throttle control eliminates all mechanical linkage, gives velvet-smooth operation from idling to full engine output. The smallest change in position of the handle is reflected by a similar change in position of the governor.



1-3, 2-4 Motor hook-up automatically reduces the power to the leading wheels if slippage starts, and increases the power to the trailing wheels.

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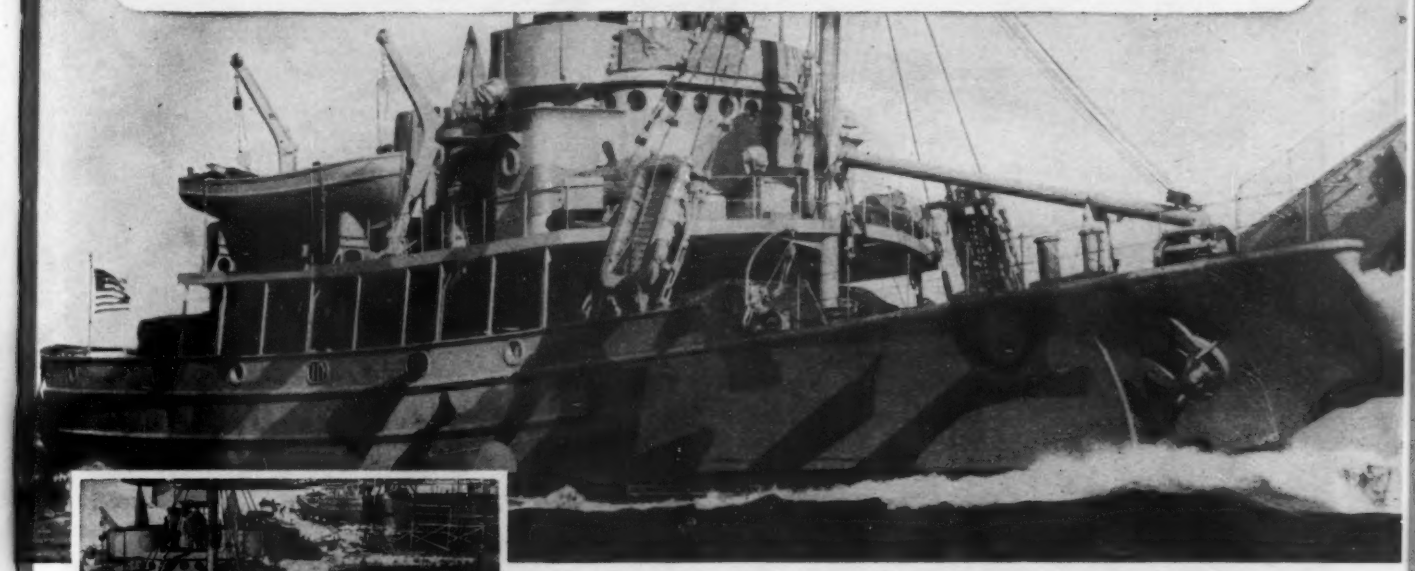

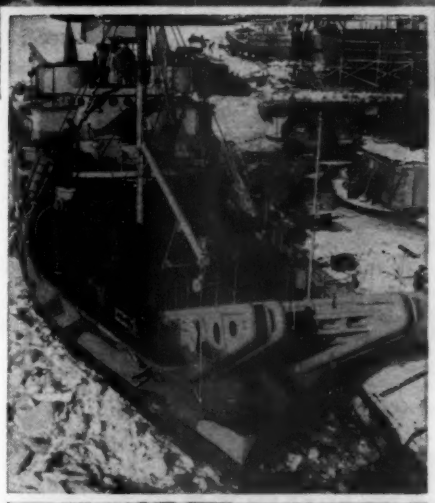

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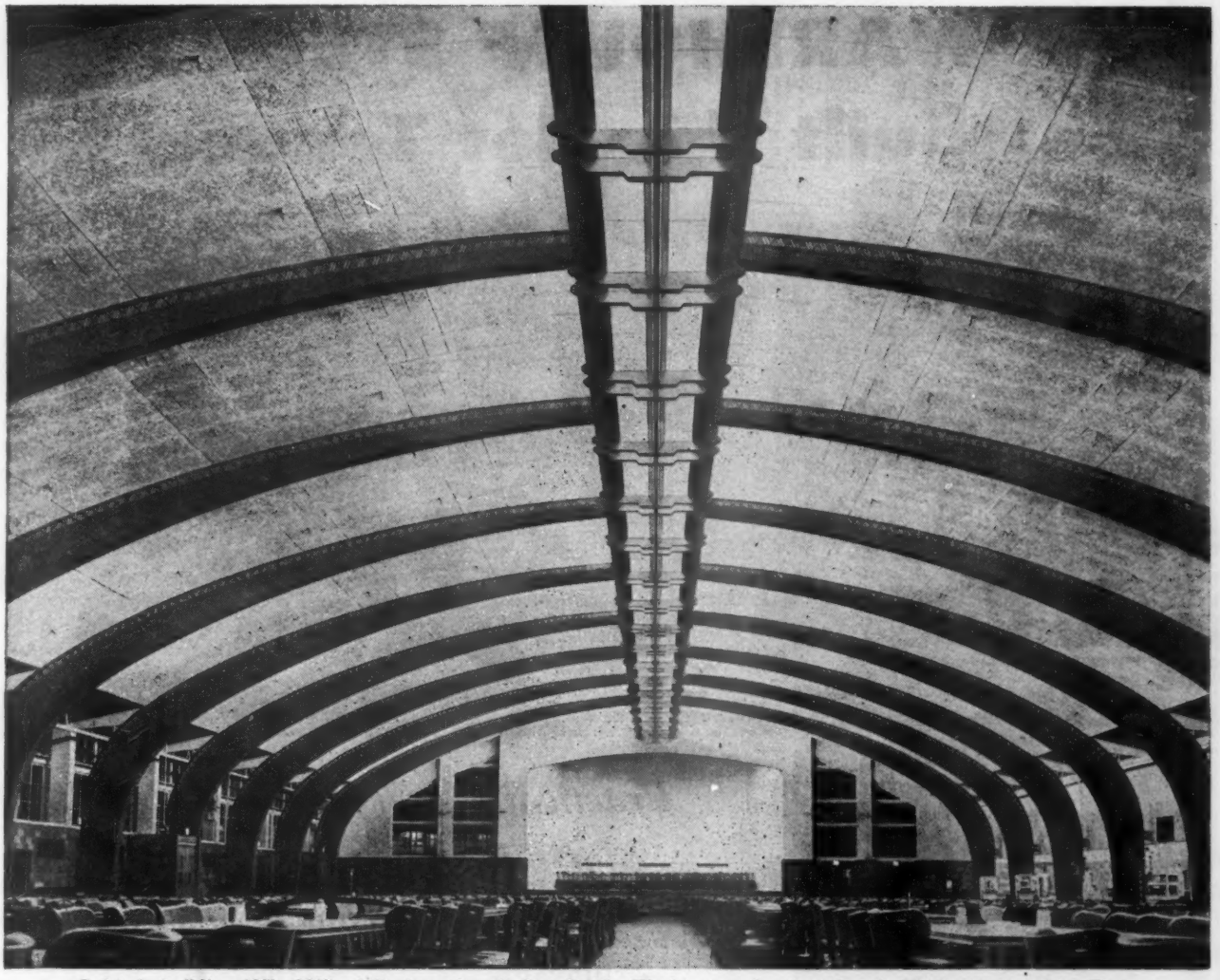

Cafeteria building (95' x 220') of Boeing Aircraft Co., Seattle, Washington. Laminated arches (12) fabricated by Timber Structures, Inc. Arch span is 92' 4"; 28' 3½" clear rise. Built up from 1" x 12" lumber, arches have 37 laminae at base; 56 laminae at knee; 19 laminae at crown. Engineer and designer: The Austin Company. Contractor: Western Construction Co.

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OF COURSE the protection of steel against rust is not new. But a discovery that *bans* rust from steel—years longer than ever before possible—that is news indeed!

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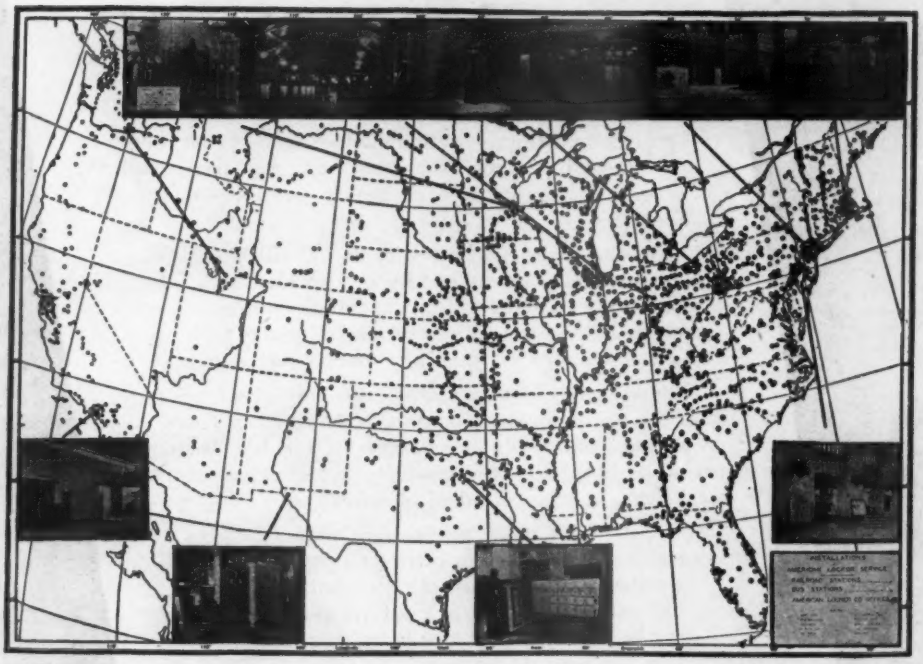

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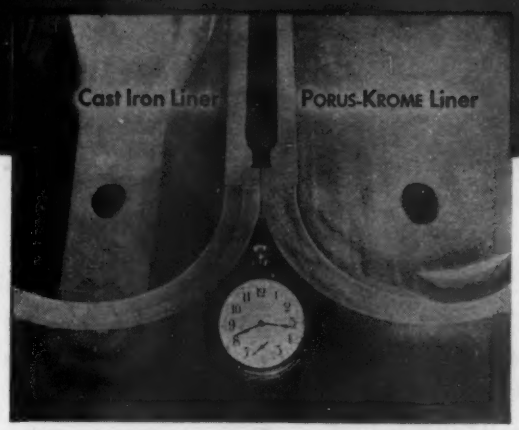
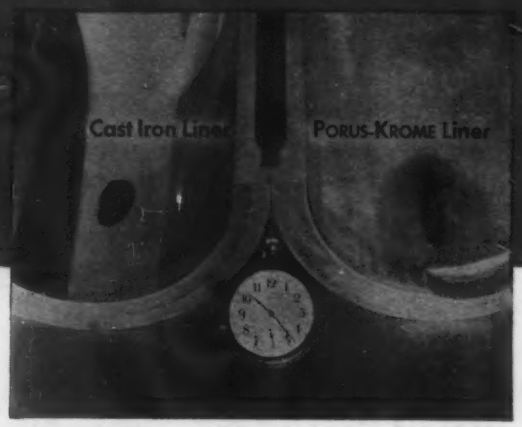
multiplies cylinder life





The porosity of PORUS-KROME assures better lubrication. The tiny pores and channels in its surface serve as reservoirs for lubricating oil, feeding it back to the surface as needed. PORUS-KROME "wets" with oil many times better than cast iron does . . . and these photographs demonstrate that the rate of dispersion is a function of porosity.

Drops of oil (as shown above) are placed on a conventional cast-iron liner and on a liner which has had PORUS-KROME applied by the patented Van der Horst process. Both have been honed to the same degree of smoothness. The time is noted.

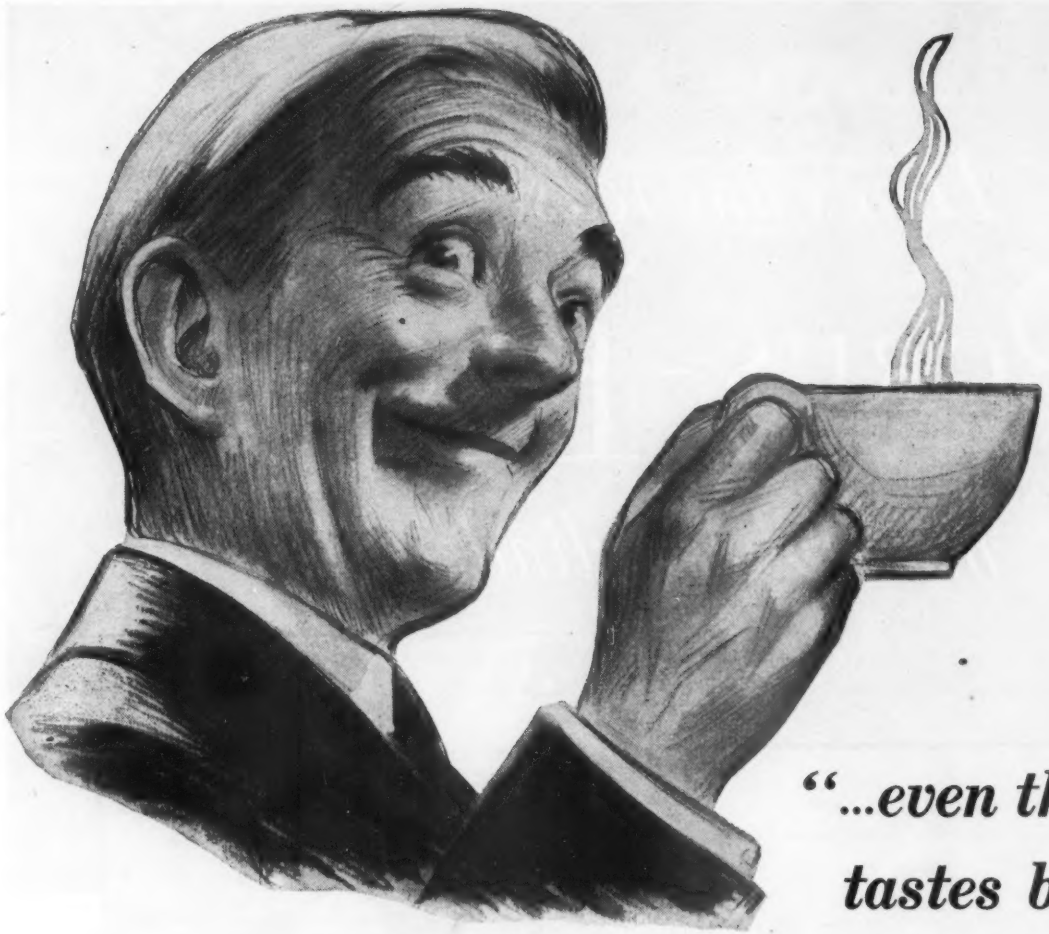
Two hours later. We see in the photograph on the right that the oil has dispersed only slightly on the cast-iron surface. On the PORUS-KROME liner, the oil has dispersed over a much larger area.

This, combined with the other characteristics of PORUS-KROME, enables it to multiply the life of cylinder liners from 4 to 20 times . . . and at the same time multiply the life of ordinary rings 3 to 5 times.

In addition to providing a "long-life" cylinder wall surface, PORUS-KROME has many diversified applications. If you have troublesome wear problems on any parts of your machines or equipment, or are seeking a way to give your customers an added value in your products, Van der Horst engineers may be able to supply the solution for you. Write today telling us just what your problems are . . . no obligation, of course. Van der Horst Corporation of America, Olean, N. Y. Plants in Olean and in Cleveland, Ohio.

PORUS - KROME VAN DER HORST

Good for the Life of your Engines



"...even the coffee tastes better..."

Funny thing . . . since they remodeled that old M&Q station at Frysville, *everything* seems friendlier.

The whole place has a new, pleasant atmosphere . . . even the lunch-counter coffee tastes better.

I used to hate to stop off there. It gave me the glooms just walking through the station. But that's all changed . . . there isn't a finer-looking station in my territory now.

The other night I got to talking with the Station Master. Asked him how come the railroad spent that kind of money to put in hardwood paneling.

"That's one on you," he told me..."most people think that hardwood-paneled walls cost a fortune. I used to think so too, 'til I learned about the Weldwood Hardwood Plywood they put in here. This whole job didn't cost so much, and would you believe it, everything was done in two weeks, without bothering *anybody*."

He told me Weldwood Plywood comes in big sheets, and you fasten it right over the old walls. A couple of good carpenters can rebuild a room in "nothing flat."

It's genuine wood. The grain is *real*, not just painted on. I've never seen a more beautiful station than this one, since they remodeled it. People don't seem to "tear through" it anymore, as if they were in a hurry to get out.

Yes, it's funny how a thing like wood-paneled walls makes you *want* to go back to a place.

• • •

Weldwood Hardwood Plywoods are normally available in practically any veneer you can name . . . mahogany, walnut, birch—even rare imported woods like lacewood and teak. Due to war conditions not all types are in stock today.

Weldwood Plywood and Plywood Products are manufactured and marketed by

UNITED STATES PLYWOOD CORPORATION
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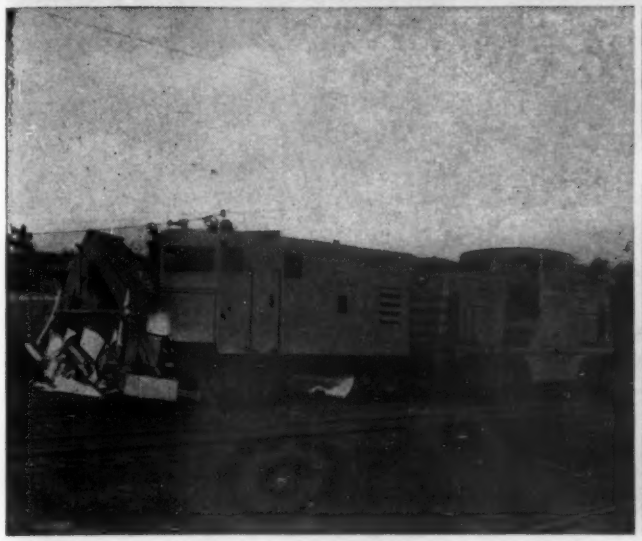
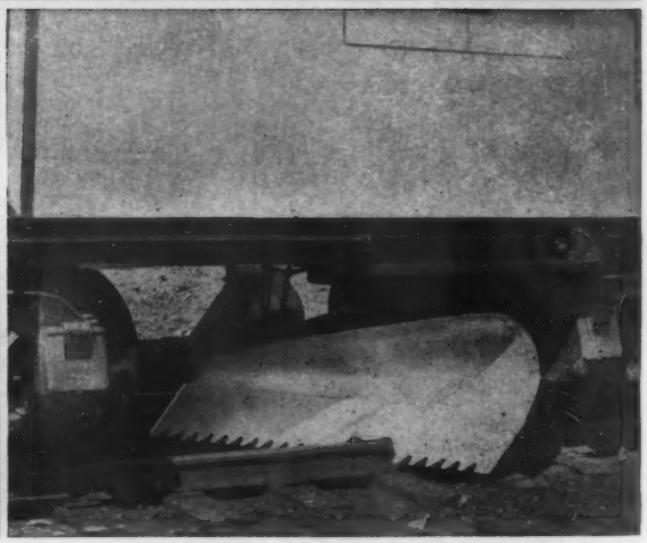
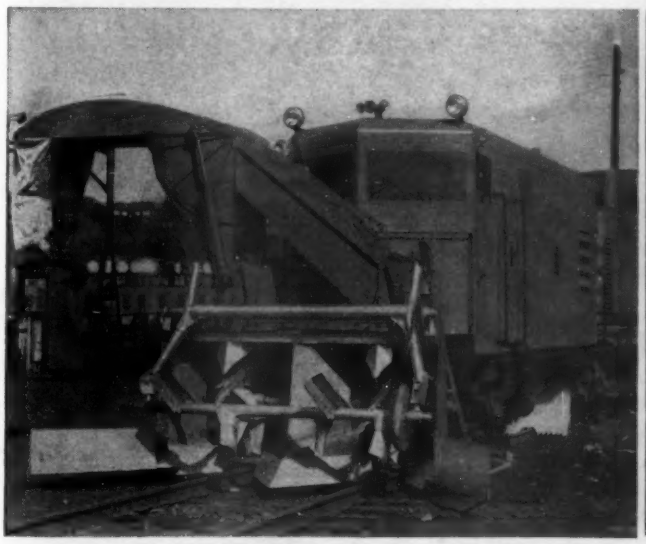
RAILROADS ASKED FOR IT





THE NEW BROS ROTARY PLOW keeps main lines open, working effectively in six to eight feet of snow, throwing it to either side of the track a distance of 75 to 100 feet with the wind.

WITH "V" TYPE ICE SCARIFIER ATTACHED, open stations and switch yards can be cleared of ice, the scarifier being used to loosen the ice and the plow pushing it to the sides of the track.



FOR COLLECTING AND LOADING, in switch yards and open stations, side wings collect the ice and snow and deliver it to the rotary. A loading chute permits easy side loading into cars or trucks.

HYDRAULIC CONTROLS are conveniently grouped within the wide vision cab, which simplifies the operator's handling of the entire unit. Wm. Bros Boiler & Mfg. Company, Minneapolis 14, Minn.

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because . . . Waukesha Ice Engine Air Conditioning cools cars standing in the terminal as well as on the road. It is completely independent of car location or movement, terminal standby service, or the locomotive. Its full cooling capacity is under automatic thermostatic control, and available at all times and in all places. By modulation, the cooling is proportioned to the demand, reducing wide fluctuations in temperature and humidity—a great comfort feature.

because . . . Full Voltage Illumination by the Engine-Generator completes the comfort cycle. Waukesha Engine-Generators are also automatic and completely independent of car movement or location. Full output is available on demand at all times—in the terminal, on the road, winter or summer, day or night.

because . . . Waukesha Ice Engine and Engine-Generator—the Comfort Twins—are backed by 10 years' use on 25 of America's major railways and many Pullmans. Include the Waukesha Comfort Twins in your new equipment plans. Write for Bulletins 1114 and 1179.

Refrigeration Division

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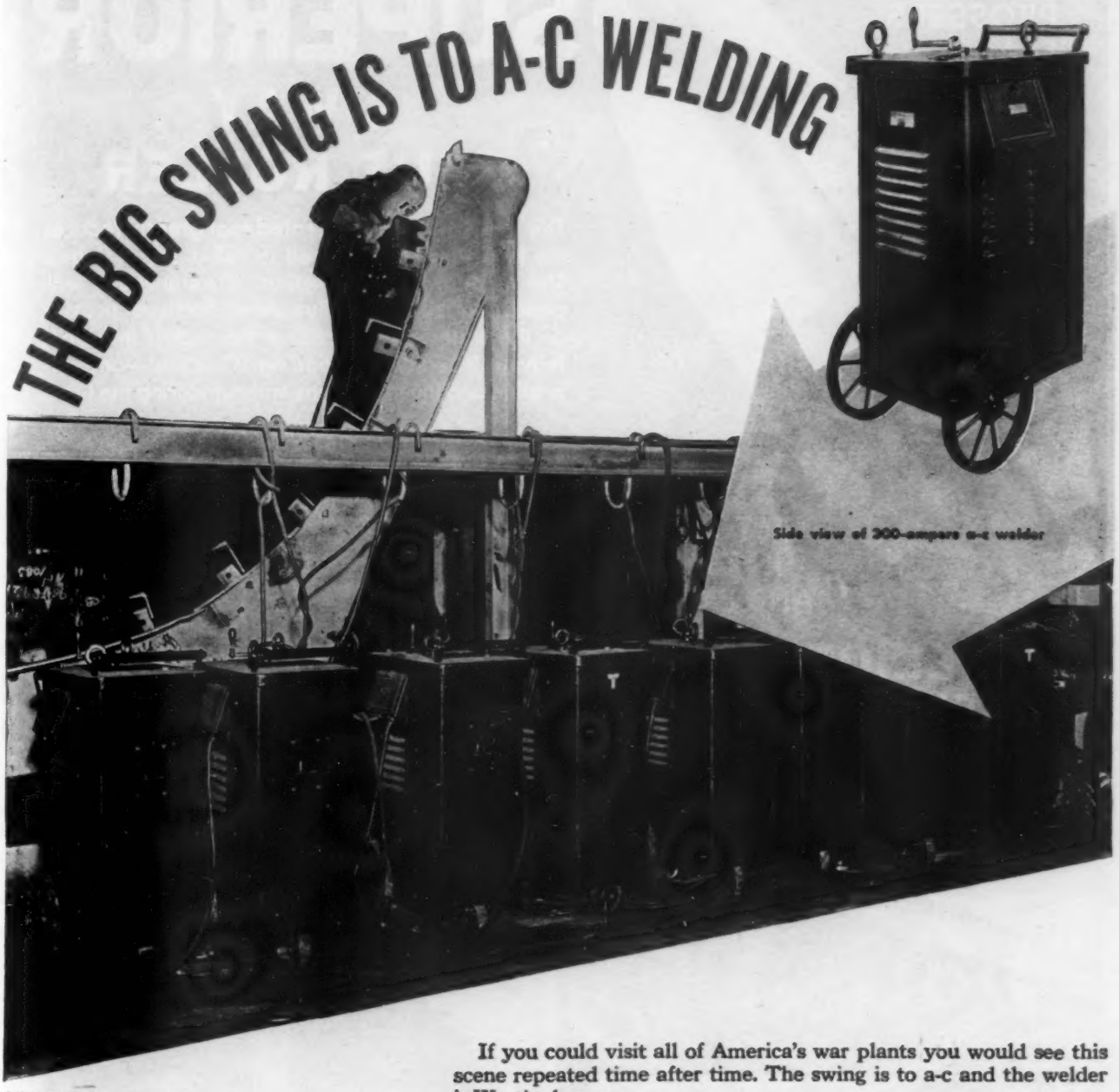
THE BIG SWING IS TO A-C WELDING



Side view of 300-ampere a-c welder

Official U. S. Navy Photograph

If you could visit all of America's war plants you would see this scene repeated time after time. The swing is to a-c and the welder is Westinghouse.

There are eight Westinghouse A-C Welders in the lineup above. There are 59 more in the same plant. All 67 of them are in constant operation using, collectively, a ton of electrodes a day.

This installation is typical of the tremendous increase in the use of a-c welders—and Westinghouse Welders in particular. But it isn't surprising when you consider the advantages of the Westinghouse A-C Welder.

There is no arc blow to contend with, which means 20% to 30% faster welding—*and better welds.* Operation is simple, too. Just select the amperage, connect the leads and you're ready to go. When location must be changed it's an easy matter to wheel the Westinghouse Welder onto the new job. There is no time lost. Add to these advantages, low first cost and low operating cost and it's no wonder the big swing is to a-c.

To meet this growing demand, Westinghouse has designed a line of a-c welders and a-c electrodes which meets all types of work requirements. There's a model for light work, an all-purpose welder, one for heavier-than-average work and a heavy-duty model for heavy production welding. For complete details, phone your nearest Westinghouse office, or write for Booklet B-3136, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-70458

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XLO

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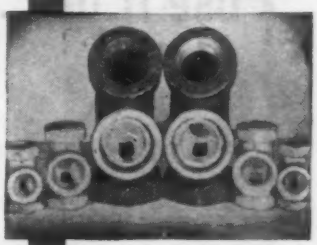

Above: Cut-out and angle cock bodies, re-bored with Ex-Cell-O Precision Boring Machine, wear as well as new parts. Previously, repaired parts gave only brief, inefficient service.

45—63

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6, Dump, Magor, 30-Yd., 50-Ton; Lift Door
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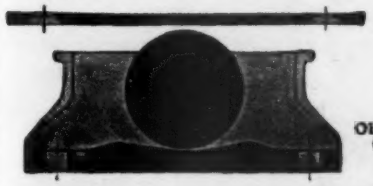

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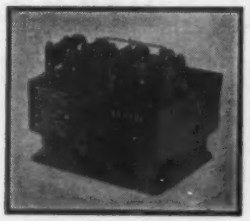

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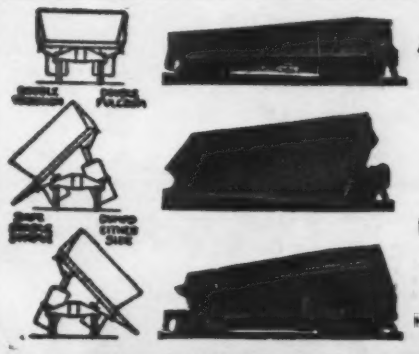

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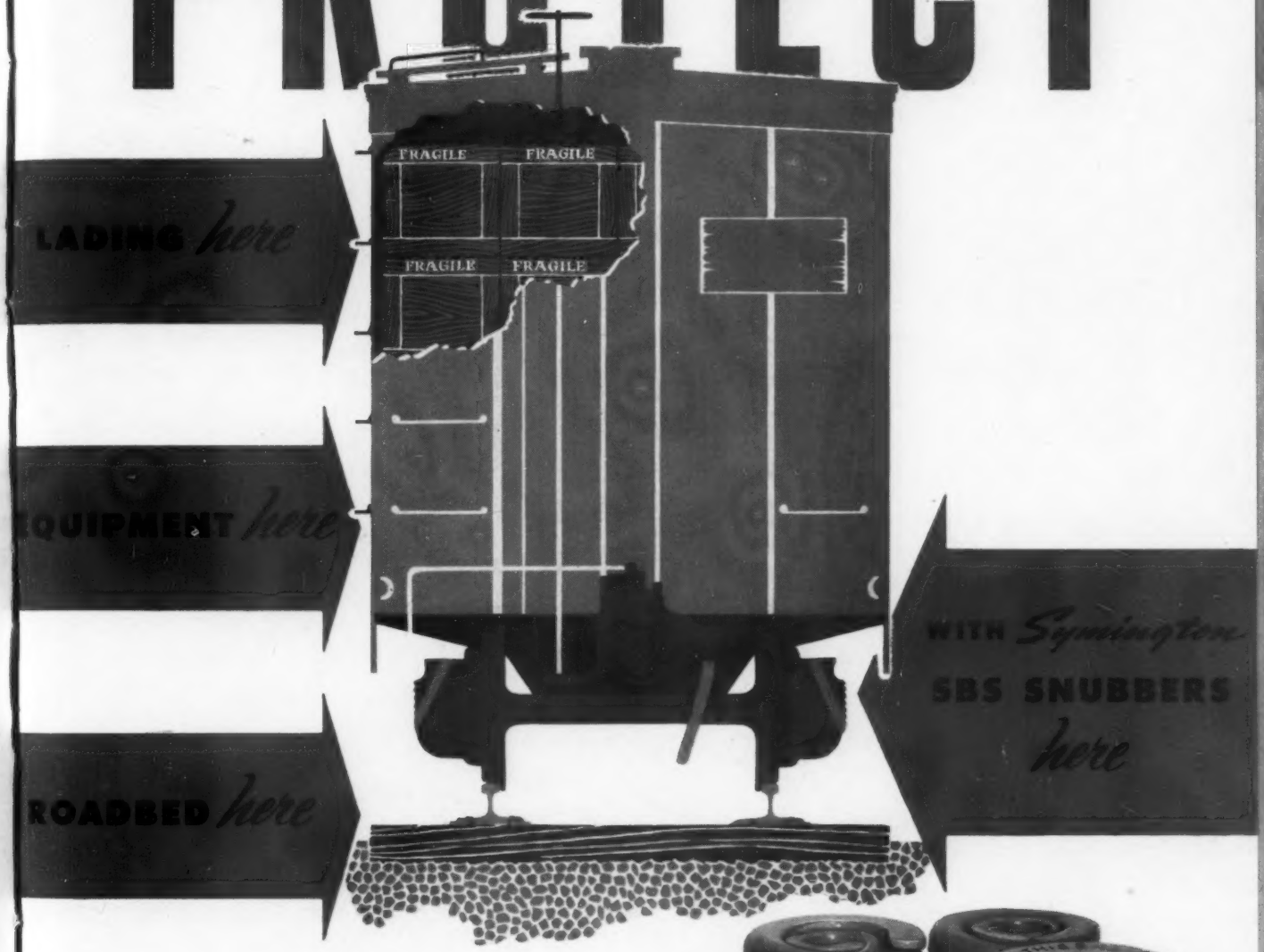

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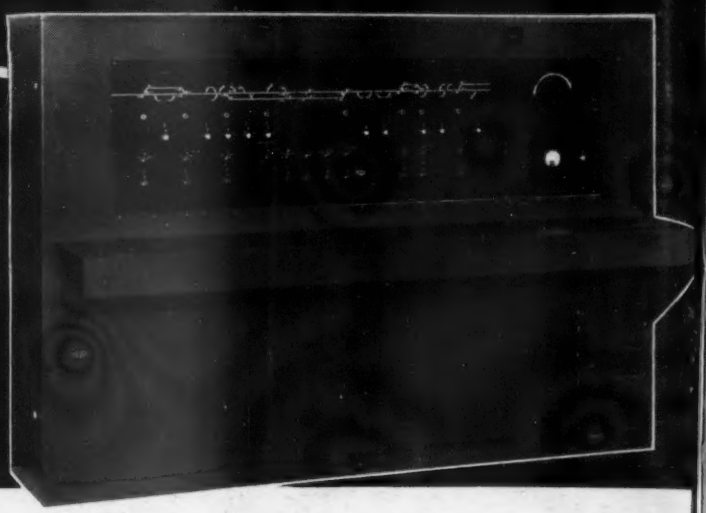

On the through route between Detroit and Chicago, the Pere Marquette has 33.4 miles of busy single track between Grandville and Fennville, Michigan.

Previous to the installation of CTC, this section was signaled with automatic block signals. Operation was by time table and train order. The average number of trains per day: East of Waverly, 28.7; west of Waverly, 25.5, including three passenger trains each way. There were various conditions, not unusual to many railroads, that caused unavoidable delays. An eastward grade ascending at 1.22% for a distance of 12,000 ft. between New Richmond and East Saugatuck requires helper engines. Eastward trains take water at New Richmond, westward trains take water at Waverly. Approximately 25% of the trains in each direction must stop at Waverly to set out and pick up cars to and from the many local industries and the two branch lines originating at that point. During certain periods each day as many as 8 or 10 trains would become "bunched" on this busy single track.

G-R-S engineers made a study of this single track section that showed definite savings in train operation, and, from this study, the Pere Marquette engineers estimated that a satisfactory return on the investment could be made.

Since installing **G-R-S CENTRALIZED TRAFFIC CONTROL** a few of the advantages that the Pere Marquette has realized are:

1. As many as 9 trains handled in less than 1½ hours' time without delay.
2. Train stops by heavy trains have been reduced.
3. Prior to CTC, draw-bars were pulled out on numerous occasions. Since CTC, only one such instance has occurred in the last two months.

Your railroad can realize similar benefits. G-R-S engineers can give you valuable assistance in predetermining the benefits you may obtain by installation of **G-R-S CENTRALIZED TRAFFIC CONTROL** Ask our nearest district office to make a study. No obligation.

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